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ABSTRACT

To facilitate career education by reducing sex-role stereotyping of occupations, a project developed multi-dimensional packages including toys and teaching modules for three grade levels: preschool (ages 3-4), second grade (ages 7-8), and fourth grade (ages 9-10). Public Action Coalition on Toys (PACT) produced the toys for the project. (Modules are available separately as CE 024 426.) These materials were evaluated through post-testing to ascertain their influence on career aspirations. Research design provided for comparison of impact of the modules when used by teachers and by research staff in comparison with control groups of non-users. Pre-school and second-grade children were interviewed; fourth graders completed a questionnaire and were interviewed. Analysis of the results suggested that the modules and toys were somewhat influential in personal career choices but had far more impact on perceptions of what occupations are acceptable for both sexes. Females, but not males, were influenced by role reversals, probably due to "male" job prestige and/or pay. (Appendixes include lists and descriptions of the toys and the evaluation instruments.) (YLB)

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# FINAL PROGRESS REPORT

# EXPANDING CAREER AWARENESS OF PRESCHOOL AND ELEMENTARY SCHOOL CHILDREN

Pamela J. Riley, PhD.
Department of Sociology
Utah State University

Ramona Marotz-Baden, PhD.
Department of Home Economics
Montana State University

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# CHAPTER ONE

## INTRODUCTION

The purpose of this project was to explore methods and techniques in career education which have the potential to reduce sex stereotyping in career choices. Sex-typing is pervasive in our society and occupational stereotyping is, in our view, particularly problematic because of its long-range implications.

We believe occupational sex stereotyping is harmful because it limits the alternatives available to both males and females. Research suggests that our schools are often lax in recognizing that girls, as well as boys, need to develop skills which will prepare them for the future. Too often the assumption is made that males must eventually make a career decision but females need not. This notion is unrealistic in light of the fact that women are currently 42 percent of the labor force and that 90 percent of the women in the U.S. have worked or will work at some time in their lives (U.S. Labor Department Statistics, 1978a).

When we do recognize the possibility for the eventual participation of girls in the paid labor force it is in a sex-typed way. That is, young girls are consciously, or unconsciously, socialized to aspire to "women's work." Our society channels girls into the "pink collar ghetto," which is, almost without exception, work that is relatively low on both the pay and the status scale. However, we not only direct girls to "acceptable" modes of work, but boys as well. In fact, when boys step out of line by suggesting an interest in such occupations as nursing or dancing the reaction is as great or greater than the response to girls aspiring to non-

traditional work. Their masculinity is often questioned and concern arises that such boys may become homosexual or at least effeminate. Thus, the consequences of sex role stereotyping are potentially psychologically damaging to both sexes.

Certainly, this argument suggests that a societal-wide change in values and expectations about appropriate behaviors for both men and women is mandated. Such a task calls for sweeping changes in society's basic institutions, such as the family, religion, economics and education. This project focuses on one institution, the educational system in this country.

Our project investigated the impact of nonsexist toys, games and teaching modules on the occupational aspirations of preschool, second, and fourth grade children. We recognize that the sex role socialization process begins at a very early age. Roles are transmitted through parents, peers, institutions and various forms of the media. The educational institution is an extremely important socializing agent during childhood (cf. Naffziger et al., 1974; Levitin and Chananie, 1972; Bereaud and Stacey, 1974; Frazier and Sadker, 1973; Sprung, 1978). Recent research has focused on the influence of children's textbooks and fiction on the development of sex roles (e.g., Oliver, 1974; Mitchell, 1973; Women on Words and Images, 1975). Parents also have a considerable impact on a child's ideas about the sex role appropriateness of behavior (Chasen, 1974; Jaffe, 1971). By the time the child enters school, notions about what constitutes "women's work" and what constitutes "men's work" are clearly entrenched (Sargent, 1977).

In addition, sex role theorists have emphasized the potential impact of children's toys and games on sex role development (cf., Goodman and Lever, 1972). As a consequence of the pressure from various citizen

groups (e.g., Public Action Coalition on Toys), some toy manufacturers are beginning to market nonsexist, nonviolent and nondangerous toys. It is argued that toys are a reflection of our value system and should, therefore, reflect the growing number of vocational options available in our society for both males and females. Toys should not serve to indoctrinate children into traditional sex roles, nor should they force a role reversal, but rather should allow children choices in contemplating occupational careers, family patterns and other future roles (Leonard, 1976). The possible role of toys in the shaping of attitudes and values should not be ignored.

As a result of the influence of parents, peers and institutions such as the schools, young girls perceive a much narrower range of occupational choices than young boys. Yet this influence appears modifiable. For example, middle class children aged 3, 4 and 5, exposed to a program of literature depicting male and female models whose roles and activities contradicted traditional sex role stereotypes, developed more flexible egalitarian attitudes toward sex roles (Flerx et al., 1976). The focus of this research addresses the potential of the medium of toys and games and corresponding teaching modules to facilitate the perception of a greater range of occupational choices for both boys and girls through reducing the sex typing of occupations.

Toys provide children an opportunity to experiment with different occupational roles. They have the potential to allow a child to explore various future career alternatives and to become aware of their interests. However, toys that reinforce sex-role stereotypes may diminish freedom to discover a variety of options. Both males and females are frequently

advised of the social limitations and constraints associated with their gender through exposure to sexist toys, literature and so on.

This project extended Riley and Powers' work (1977) which assessed the effect of nontraditional, nonsexist toys versus traditional toys on the career choices of kindergarten, second and fourth graders. In addition, we developed additional toys and teaching modules which serve to broaden perceived career alternatives for both boys and girls. These materials are available for nationwide dissemination and utilization by the target population--pre-school and elementary students and their teachers.

Current information about the influence of toys is extremely limited. There is some evidence suggesting that toys have an indirect impact on occupational preferences of young children, Boys tend to select typically "male" occupations such as doctor, astronaut and construction worker and girls prefer "female" occupations such as nurse, teacher and dancer (cf., Looft, 1971). In addition, females perceive a more limited range of occupational choices than do males. This is also true when children reverse roles and boys pretend they are girls and girls pretend they are boys (Beuf, 1974; Konle, 1974; Riley and Powers, 1977). In 1974, the U.S. Office of Education issued a policy statement which argued: "Occupational stereotyping currently acts to hinder full freedom of occupational choice for both males and females and for minority persons. These restrictions can be reduced to some extent, through programmatic intervention strategies begun in early childhood years." This, then, has been our goal--to explore the potential of such an intervention. We believe that a thorough, analytical approach to the evaluation of the role of modules, accompanied by nonsexist toys and games, in promoting equity in early childhood career education is necessary and can be an important tool in reducing sex role stereotyping.

## Literature Review

### Women in the Labor Force

The issue of the occupational aspirations of women or girls is particularly important today because of increasing proportions of women in the labor force, especially since 1947. In 1947, 31.8 percent of women in this country were in the labor force (78.3 percent of men in the U.S. were in the labor force in 1977). In 1800, women made up 4.6 percent of the total work force; in 1900 they were 13.3 percent, in 1950 they were 27.9 percent of the total; in 1960, 37.1 percent; and in 1976, 40.7 percent (the figure originally predicted for 1985). It is projected that by 1990, more than one of every two women 16 years and over will be in the work force. The average young woman today can expect to spend 23 years in the paid work force (Department of Labor, 1977).

In 1975 women held two of every five jobs in the U.S. (U.S. News and World Report, 1975). Most of these women work because of economic need. In 1977, nearly two-thirds of the women in the labor force were single, separated, divorced, widowed, or had husbands earning less than $10,000 in 1976 (U.S. Department of Labor, 1978b).

However, despite the large number of women working, women tend to be heavily concentrated in the "female jobs." These are the jobs that typically provide lower incomes and lower prestige than "male jobs." Such occupational segregation appears to be a direct product of sex role socialization and is certainly an obstacle in the achievement of economic equality for women (as Blau [1975] points out, "separate but equal" does not work for women any more than it does for other groups in our society). The impact of shifting the present situation could be substantial.

> Since women presently constitute nearly two-fifths of the civilian labor force and since they are so heavily concentrated in predominantly female jobs, complete integration is a task of enormous proportions. Once a substantial movement of women into the male sector of the labor market took place, however, we could expect the incomes of women in predominantly female occupations to increase, since the supply of labor for these jobs would no longer be so abundant. This in turn should attract men into presently female occupations. Thus the long-range benefits of a sizable movement toward increased integration could be very great (Blau, 1975:225).

The statistics indicate that a large proportion of the female population either chooses to work or must work, and yet current occupational socialization for females (via parents, schools, books, toys, etc.) does not prepare women for occupations that are economically rewarding or status-conferring. In addition, the statistics are not at all consistent with the popular notion that girls need not concern themselves with future occupational aspirations because they will not be a part of the labor force. That is, the reasoning that girls only need to make themselves attractive to find a husband and to prepare themselves to be homemakers and mothers is faulty. The reality is that they are likely to be both homemakers and members of the work force.

This suggests that women, in particular, would benefit from an increased awareness of their occupational opportunities. Since early socialization is critical in laying the foundation for adult roles, we will briefly summarize pertinent aspects of early sex role socialization.

## Sex Role Development

Learning to play roles and learning the norms of one's culture is the process of socialization. Individuals are initially socialized within the family and later into other groups. Sex roles are assigned very early.

Each culture has its own definitions about the roles assumed "natural" for men and women, and cross-cultural data suggests that there is a great deal of variation in these definitions. That is, these studies suggest that the characteristics of maleness and femaleness are not biologically determined but rather based on cultural definitions of what behavior is considered appropriate for what sex (cf., Mead, 1939; Whiting and Edwards, 1976).

These cultural definitions are applied at birth; boys are dressed in blue and girls in pink. Some research even suggests that sex differences in the behavior of male and female infants are mostly attributable to the reinforcement given by parents for behavior defined as sexually appropriate (Moss, 1967; Goldberg and Lewis, 1969). This type of socialization is based on simple behavioral reinforcement. The child is rewarded for sex-appropriate responses and often punished (for example, through love withdrawal or not being given attention) for sex-inappropriate behavior. In a culture that defines "boy-like" behavior as aggressive behavior, we would expect boys to be rewarded for aggressive behavior. If "girl-like" behavior is defined as nonaggressive and obedient behavior, then girls are likely to be rewarded for conforming to the definition and punished for being aggressive. As social learning theory would predict, girls in this culture are less aggressive and more obedient and conforming in their relationships than are boys.

Once the child is old enough to make conceptual distinctions, cognitive learning begins. In the preschool years three analytic processes occur in sex role learning (Weitzman, 1975:109). This learning process begins

around the age of three or four and by age six is complete. The three processes the child learns are:

1. To distinguish between men and women and between boys and girls, and to know what kinds of behavior are characteristic of each;
2. To express appropriate sex role preferences for himself or herself; and
3. To behave in accordance with sex role standards.

Several studies empirically support the notion that children's perceptions of occupational roles "appropriate" to gender are formed early. Such research indicates that both sexes know what little boys and little girls are expected to do. Girls grow up to be mothers and cook and clean; while boys grow up to be fathers and work. If a woman's place is not perceived as being in the home, it is in certain specified occupations (cf. Schlossberg and Goodman, 1972; Beuf, 1974; Looft, 1971; and O'Hara, 1962).

In a recent survey of 98 male and 96 female kindergarten students, Riley and Powers (1977) asked the children what they would like to be when they grow up. The average proportion of males in the occupations selected by the boys was 88 percent--indicating they are well-aware of the expected roles for men. In a reversal condition, the boys were asked what they would like to be when they grow up if they were girls; the proportion of males in the occupations selected under this condition dropped to 29 percent. The average proportion of males in the occupations selected by girls when asked what they wanted to be when they grow up was about 13 percent. However, in the reversal condition, the figure jumped to 86 percent. In addition, Riley and Powers found that nearly 80 percent of the boys picked careers that have a male dominance index of 91-100 percent.

Only 10 percent of the girls picked occupations that are 91-100 percent male. In the reversal condition it fell to 21.5 percent for boys and rose to 73.6 percent for girls. Further, less than two percent of the boys selected careers that are less than 20 percent male but 87 percent of the girls chose occupations less than 20 percent male. In the reversal condition nearly 68 percent of the boys selected occupations less than 20 percent male while only five percent of the girls made such choices. All of this indicates that children are early aware of "appropriate" occupational roles for both themselves and for others.

It has also been suggested that sex-typing is initiated by early sex labeling of children (Kohlberg, 1966) as a "boy" or a "girl." By the age of two or three, children know their own self-categorization and begin labeling others. This basic sexual self-concept becomes a major organizer and determinant of attitudes, values and activities. Thus, the boy in effect says, "I am a boy; therefore I want to do boy things; therefore the opportunity to do boy things (and to gain approval for doing them) is rewarding" (Kohlberg, 1966:89). These things are learned from men and women, in the child's social world, who serve as role models and who frequently provide instructions on appropriate behavior. While parents are important to the development of sex roles, there are several other sources.

## Sources of Learning Sex Roles

Books and Television. Several studies indicate children's books are an important "propaganda" tool (e.g., Weitzman et al., 1972; Mitchell, 1973; Oliver, 1974; Women on Words and Images, 1975). These studies

indicate that girls are portrayed in books as passive and engaging in service activities to assist and please their brothers or fathers, while boys are portrayed in active, adventuresome and independent roles. The implications of many children's books is that boys can hold unlimited aspirations and that their future careers can include adventure, prestige and financial success. On the other hand, it is suggested (indirectly) that girls limit their aspirations to the less prestigious and less adventuresome world of work. Books, like parents, can provide role models for children. In children's books men are typically shown in a wide variety of professions and occupations, while women are nearly always portrayed as wives or mothers. As Weitzman et al. (1972) point out:

> ...Little girls receive attention and praise for their attractiveness, while boys are admired for their achievements and cleverness. For girls, achievement is marriage and becoming a mother. Most of the women in picture books have status by virtue of their relationships to specific men--they are the wives of the kings, judges, adventurers and explorers, but they themselves are not the rulers, judges, adventurers and explorers.
>
> Through picture books, girls are taught to have low aspirations because there are so few opportunities portrayed as available to them. The world of picture books never tells little girls that as women they might find fulfillment outside of their homes or through intellectual pursuits...
>
> In a country with close to 40 percent of the women in the labor force it is absurd to find that women in picture books remain only mothers and wives...
>
> Their future occupational world is presented as consisting primarily of glamour and service. Women are excluded from the world of sports, politics and science. They can achieve only by being attractive, congenial and serving others.

Television provides another source of sex role socialization. The images presented on television are similar to those presented in children's books. These images reflect and reinforce stereotyped notions of sex roles. Research indicates that commercials and programming consistently project sex role stereotypes (cf., Gardner, 1970). Men are portrayed to be independent and intelligent and women as submissive, dependent and very

concerned with sex appeal. Cartoons typically depict men as competent and aggressive and women as incompetent, different and unable to perform tasks successfully---unless they use magic (Sternglanz and Serbin, 1974).

Toys and Games. Yet another influential source of sex role socialization is found in children's toys (cf. McQueen, 1978). Toys and games, like books and television, can function to influence future aspirations and attitudes as evidenced in this quote from Pogrebin (1973:49):

> Job bias is illegal in adult society, but it proliferates among so-called educational toys. Playskool's 'When I Grow Up," a matching game, contains pictures of 21 males in widely varied jobs, from mason to milkman and from sailor to scientist. The three females match up with teacher, violinist, and dancer. 'Occupations,' a preschooler's puzzle by Fisher-Price, gives boys five role choices; girls can pick 'mother,' 'ballerina,' or 'nurse.' 'People and Jobs' (Questor) has four women out of 24 small puzzles. The women match up with only four jobs: librarian, teacher, waitress and skier.

As infants, children are exposed to toys that are relatively neuter--such as rattles and mobiles, but as children mature their toys tend to become dichotomized along sex role lines. Consequently, they transmit very different messages about "appropriate" sex role behavior. Boys receive toys that identify with the masculine role as it is culturally defined. Boys tend to play with trucks, cars, science equipment, guns, tools and other toys designed for manipulation, destruction and construction (Mitchell, 1973). On the other hand, girls are offered dolls, cooking equipment, domestic tools, and other toys that suggest the only "appropriate" vocation for females--mothering. This is further illustrated in the following quote from an advertisement of the Mattel toy manufacturing company (Komisar, 1971:305):

> Because girls dream about being a ballerina, Mattel makes Dancerina...a pink confection in a silken blouse and ruffled tutu... Wishing you were older is part of growing up...Barbie, a young fashion model, and her friends do the 'in' things girls should do--talk about new places to visit, new clothes to wear and new friends to meet...
>
> Because boys were born to build and learn, Mattel makes Tog'l (a set of building blocks) for creative play...Because boys are curious about things big and small, Mattell makes Super-Eyes, a telescope that boys can have in one ingenious set of optically engineered lenses and scope...that...create dozens of viewing devices--all for science or all for fun.

We can presume that such toys influence later career and domestic behaviors. Lever (1976) makes the point that, in their childhood play, boys learn skills needed later for business and professional careers, while girls do not.

In a study of Christmas buying patterns, Yale sociologists Louis Goodman and Janet Lever (1972) found that boys received more toys and a wider range of toys as gifts. Buyers were more likely to buy creative toys (e.g., science kits) for boys and passive toys (e.g., dolls) for girls. Boys tended to receive more expensive and varied toys and were much more likely to receive toys that related to occupations or to cognitive learning.

In addition to the actual content of toys and games on the market, sexism has been noted in the packaging of toys ("visual brainwashing"). Several groups of women have studied the covers and boxes of toys. Mary Bailey of Garret Park, Maryland conducted one tabulation (Washington Post, 1972) of 842 toys for the National Organization of Women. Her group of mothers found that there were twice as many boys as girls depicted on game packages. In science and education toys, boys were depicted 16 times more often than girls. When both sexes were represented, in 14 out of 15 packages, the girls were the onlookers.

In another 1972 toy study, it was found

> that of 860 toy boxes, 50 percent of the toys costing under $2.00 were aimed at girls, with only 31 percent of the toys in that price range aimed exclusively at boys...However, in the $5.00 and over category, 19 percent were girl-oriented, but 34 percent were directed to boys.

According to the toy industry's figures, average parents spend about $85.90 a year on toys. A 1973 Crossley Survey report found that 80 percent of the adult toy buyers walking into discount stores and 78 percent of those going into department stores had absolutely no idea of what they would walk out with. Such haphazard buying suggests that few parents stop and think whether to choose a nurse kit, a doctor outfit, or a medic bag for their daughter. Ordinarily, equipment in schools is chosen with more prior thought, but the considerations are usually cost, durability and educational value rather than sexual stereotyping or its absence. Our modules and toys may encourage teachers to consider the "self-image" dimension of toys for the first time.

Representatives of the toy industry insist that educational toys have an influence; whereas, they insist that violent toys have no influence. (A similar inconsistency is evident in the television industry, where broadcasters say to upset parents, "television has no effect," and yet say to the advertisers, when they are selling time, "see the effect we have!" [New York Times Magazine, 1975].) Research studies on the effect of toys are also inconsistent. Dr. Jerome Frank of the Johns Hopkins University School of Medicine quotes studies that indicate, "Children who had played with toy guns were more likely to destroy the work of a friendly playmate than children who had not." However, Dr. H. Robert Quilitch of the Nevada Mental Health Institute and the Center for Applied Behavior Analysis in Lawrence, Nebraska found that children given an

educational clock toy did not learn to tell time any faster than those in the control group. There may be significant differences between the effects of guns and clocks on children that explain these contradictions, but nontheless, the studies to date are not conclusive concerning the impact of playthings on children's values, self-esteem and behavior.

Psychologist Paul Torrance, in his studies on creativity, has focused on children's reactions to toys. He found a reluctance on the part of six-year-old boys to play with nurses' kits and a reluctance on the part of third, fourth and fifth-grade girls to work with science toys. Since his studies were conducted in 19[illegible] and 1960, he was ahead of his time in trying to change the attitudes of girls (Howe, 1971). Peer influence is surely a factor. Liss (1978) suggests that while teachers and peers promote different play choices and toys for boys and girls, other children of the same sex serve as role models. She asserts that imitation of same sex peers and reinforcement from both sexes are important components influencing play.

The studies that have been described all assume an impact from television, books and toys on sex role socialization. However, other than Riley and Powers (1977) and Flerx et al. (1976), we know of no research that has directly manipulated these sources to examine a cause and effect relationship. Thus far, they have been viewed as potential, if not probable, influences because of their obviously biased perspective and presentation. We do know that interviews with children indicate that clearly differentiated male and female roles are internalized by children. When they have been asked to describe what they feel is expected of boys and girls, their responses are consistent with the roles presented in the media. This is

also true when children have been asked about their images of men and women (Hartley, 1959). However, we do not have adequate information on the impact of any one source (i.e., toys, books, television). This study addresses the impact of occupational toys and games on the aspirations of young children.

Currently, new toys and games are being introduced on the market which reflect the new awareness of women's expanded roles. These are nonsexist toys in that they do not attempt to promote militaristic values and aggression in boys or to limit career aspirations and alternatives for girls. In other words, these are toys and games that do not indoctrinate children into traditional sex roles--they offer options for boys and girls; none of them are for "boys only" or "girls only." The major thrust of our work has been to investigate the impact of nonsexist toys and teaching modules on the occupational aspirations of preschool, second and fourth grade children.

Teacher Influence

The pervasiveness of sex stereotyping in elementary schools has been well documented. Toys and textbooks teach sex stereotyping and classes and activities are often segregated by sex. In our educational institutions, three socialization agents, teachers, peers and teaching materials, have been shown to influence young children in the formation of sex-typed career aspirations and sex roles. Increased knowledge of the nature and extent of the influence of each of these agents is critical if we are to eliminate sex role stereotypes.

The authority structure of the school itself sustains and reinforces stereotypes since 85 percent of all elementary teachers are women and 79 percent of all elementary principals are men (Daniels, 1975:8). Because teachers play a very influential role in a child's early development, the attitudes of teachers toward sex typing occupations must be considered. There is the widespread belief of teachers, whatever their sex, that girls are likely to "love" reading and "hate" mathematics and science. The Rosenthal study, Pygmalion in the Classroom (1968), has demonstrated that teachers' expectations significantly determine student behavior and attitudes. Girls are not expected to think logically or to understand scientific principles; they accept this belief internally and abandon mathematics and science relatively early.

Critics of the American educational system indict women teachers for feminizing boys but overlook the damage done to girls by rewarding them for being "good" pupils (i.e., docile, quiet), teachers reinforce the notion that girls should be passive and conforming. Boys, even though they may be reprimanded more frequently for their boisterousness, may ultimately receive more attention from the teacher (cf. Serbin, 1978). In the long run, both boys and girls suffer from being pressured into roles often difficlt to fulfill. Girls are made to feel ashamed for behaving in "unlady-like" manner, boys for expressing emotions (Olds, 1973). Teachers need education on this issue. Modules, such as used in this study, have the potential to expand the outlook of teachers as well as children.

The influence of teachers as mediating agents has also been discussed by Gutentag and Bray (1977:397):

> ...men run the system, women work in it....Second, the teaching materials used in schools have been evaluated as discriminatory

> ....Third, activities are segregated by sex,...The fourth major way in which children are differentially socialized is through attitudes and behaviors of teachers.

Apparently, then, many teachers exhibit behaviors which reinforce sex role stereotypes; they discipline, evaluate and reward girls somewhat differently than boys (cf., Frazier and Sadker, 1973; Serbin, 1978). The elimination of teacher bias has recently received attention. Cohen (1974) and others have suggested that classroom teachers and parents can counteract textbook sex role stereotypes by using alternative nonsex-stereotyped materials.

A factor frequently ignored in sex role studies is the strength of peer group association, especially same sex peers in the elementary and secondary age groups, upon what is viewed as sharing sex-appropriate role behavior. For example, the importance of the influence of peer interaction on sex role stereotyping has been pointed out by Langlois's (1977) study comparing the influence of mothers and peers as socialization agents in situations involving stereotypic sex-appropriate and sex-inappropriate dress-up and toy behavior. Peers were much more critical of perceived inappropriate sex role behavior than were mothers. Additional data suggest that peers become increasingly important as agents of social reinforcement for sex-typed behaviors from age three on (e.g., Charlesworth and Hartup, 1967; Fagot and Patterson, 1969; McCandless, Bush and Carden, 1976).

As mentioned above, toys and other materials such as books and films have been shown to restrict the occupational choices and aspirations of women (cf., Kacerguis and Adams, 1978). It seems very logical that the sex stereotypical materials also limit occupational choices and aspirations for men. While occupational aspirations of young children probably have very little, if any, predictive ability in terms of actual future occupa-

tional choices, we argue that the range of occupations viewed as acceptable for a particular sex acts to restrict both occupational aspirations and subsequent freedom of choice. Developmental research indicates that children are aware of their socially expected sex role behavior early in life, and when they realize that their gender is permanent they begin to value behaviors and attitudes consistent with their gender (Kohlberg, 1966).

Kacerguis and Adams (1979:370) point out that:

> ...trends toward gender identity formation can be observed in children's occupational choices. Hewitt (1975) and Looft (1971) report that boys are more likely than girls to prefer stereotypic masculine occupations. Further, Looft (1971) presents anecdotal data which suggest that when young girls express interest in a masculine stereotyped occupation, they are also likely to recognize that such a choice is not feasible, indicating societal forces would not approve. It is both interesting and disturbing that girls, almost two decades prior to the time of actual vocational decisions, are acutely aware of the limited vocational options available to them.

These findings are further supported in the research conducted by Riley and Powers (1977).

If exposure to teaching aids (nonsexist toys and modules for classroom use) broadens girls' and boys' perceptions of their options, we would expect children's occupations and aspirations to reflect a wide range of alternatives. Since actual choices are usually based on available options, it seems reasonable to expect children with this kind of exposure to exhibit less stereotypic vocations, when adults, than children who view their alternatives as limited by sex role stereotypes.

Many classroom-based curricula have been developed in recent years. However, as noted in a National Institute of Education Paper on Education and Work:

> Most focus upon providing children with experiences which promote self-understanding, develop 'appropriate' attitudes toward the world of work, or demonstrate characteristics of the world of work such as balancing costs and profit, cooperation and competition, and the assembly line. Only a few devote much attention to the provision of occupational role models for children or of information about the duties of specific occupations. Very few indeed express any intention of combatting stereotyped views of appropriate occupational roles for men and women, whites and nonwhites (Leifer and Lesser, 1976:54-55).

This report goes on to comment that most of the curricula are not accompanied by adequate reports of their implementation and evaluations of their efforts.

One impressive project, which has been nationally validated and is being disseminated, is Project HEAR (Human Educational Awareness Resource) a fourth to 12th grade program. This program stresses the reduction of sex role stereotyping and has been followed by Project "Opening the Doors" which also focuses on curriculum development, stressing nonsexist career education.[1]

This literature review suggests the paucity of research addressing the possible influence and value of exposure to nonsexist toys and games for career education. It also makes it apparent that most children in our society are confronted with sex role stereotyping from many sources. This study addresses the need to elucidate the potential for toys/games and modules to promote nonstereotypical occupational images and, consequently, a wider range of options for both males and females.

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[1]Cogent Associates (575 Ewing Street, Princeton, NJ 06540) was funded by the U.S. Office of Education to conduct these two projects.

# CHAPTER TWO

## OBJECTIVES AND METHODS

This project was designed to facilitate career education for both males and females. It is recognized that such education is limited in a society that tends to sex type occupations andthus expose males and females to differential career alternatives. The assumption that exposure to a vareity of career options, not based on sex, will reduce certain aspects of sex role stereotyping guided this project from its inception. Our goal has been to expand aspirations, opportunities and experiences for both sexes.

The activities to achieve the major objectives of the investigators are discussed in detail below. For clarification, these objectives have been separated into two components: (1) toy development, and (2) teaching modules.

### Toy Development

The researchers subcontracted with the Public Action Coalition on Toys (PACT), a national consumer rights organization based in New York City, to develop toys which would fill a gap observed in a previous study conducted by the Principal Investigator and one of the consultants (Riley and Powers, 1977). This gap regards the lack of male role reversals in the few toys and games on the market which depict females in non-traditional careers (e.g., Milton Bradley's "Our Helpers"; Instructo's "Community Careers"; and the Judy Puzzles). These toys and games show women in many nontraditional and nonstereotypical careers (e.g., mechanic, mail carrier, fire fighter, police officer, doctor, lawyer, etc.); however,

males are shown only in stereotypical roles (e.g., no male nurses, secretaries, librarians, telephone operators, airline flight attendants, bank tellers, etc.).

For several years we have witnessed an emphasis on providing non-traditional alternatives for females. The rationale takes two positions: (1) white-collar, professional jobs (those with high status and high economic rewards) have typically been closed to women, or at least have not been presented as viable options in the socialization process; and (2) regardless of sex, all careers are potentially suitable for all people.

There are several reasons which provide cogent justification for the development of male role reversals. One interpretation of the current trend in various kibbitzim toward traditional roles for women is that females were originally integrated into traditional male roles but males were never integrated into traditional female roles; therefore, an egalitarian setting never really existed (Talmon, 1965). We would argue that it is time to eliminate sex role stereotyping for men as well. Men should be allowed and even encouraged to be nurses just as women should be allowed and encouraged to be doctors. We are opening up many new possibilities for women but few for men. A male who has an interest in medicine should not be forced to satisfy that interest only through becoming a doctor (just as a woman who has such an interest should not have only the option of becoming a nurse).

In reality, it appears that we discriminate against men, as well as women, who elect nontraditional paths. Certainly the male hairdresser or the male in the typing pool is not freely accepted in that role by the larger society. If we are going to encourage women to move into vocational

fields that have been traditionally dominated by men, it makes sense to allow males greater access to fields traditionally dominated by females. Society needs it nurses, teachers, bank tellers and so forth--those occupations must be filled without respect to sex. Society also needs to respect those who assume roles that have been defined as "women's work" and thus less worthy. The labeling as homosexuals of men who are associated with such occupations can only be changed if we support the legitimacy of nontraditional careers for both sexes. Based on this premise, we subcontracted with the Public Action Coalition on Toys, who developed models for us, depicting males in nontraditional roles. These toys were tested and then promoted to the toy industry for possible adoption and manufacture by nationally known companies. (This is similar to Barbara Sprung's [Women's Action Alliance] past work with female role reversals.)

In summary, our objective has been to develop puzzles and games to use in our research, and, perhaps, to be marketed in the future either through HEW or on the open market.

PACT had toys developed and submitted to us by January, 1979, in time to test them in the classrooms along with teaching modules. We received puzzles and lotto games (forwarded to OCE along with this report). PACT's final report to us is found in Chapter Five. This report also describes their contacts with toy manufacturers.

Teaching Module Development

To attain the long-range goal of eliminating aspects of career stereotyping and sex role socialization of young children which limit aspirations, experiences and future options of women and men, the objective set forth was to ascertain the influence exposure to teaching modules (utilizing toys and games depicting careers in a nonsexist manner) has on career

aspirations of pre-schoolers (ages 3-4), second graders (ages 7-8) and fourth graders (ages 9-10). If these modules are effective in expanding perceived career options, students in each of the three age groups who have been exposed to the teaching module should exhibit a wider range of occupational aspirations than children in these age groups not exposed to the same nonsexist toys, games and modules.

These modules were developed in the fall of 1978 through a subcontract with Montana State University and the Co-Principal Investigator, Dr. Ramona Marotz-Baden. Dr. Marotz-Baden and her graduate research assistant, Ms. Colleen McGuire, developed the modules which are enclosed in a separately bound document. In addition, the researchers at Utah State, using the modules, have made modifications and comments regarding the original materials. These comments are included along with the modules.

On December 9, 1978, Dr. Marotz-Baden and Ms. McGuire came to Logan, Utah, to discuss the modules and corresponding games and toys with the USU staff and with the local teachers participating in the program. The teachers were unanimously pleased and excited about using the toys and modules in their classrooms. (The complete list of toys used in the project is included in Appendix A.)

Classroom Intervention

Classroom intervention and observation took place in Logan, Utah. In the fall of 1978 the Principal Investigator hired two USU graduate students, Paul Campbell, Department of Sociology, and Melinda Toney, Department of Family and Human Development, to assist in the overall project and to present the modules in some of the classrooms. In addition, various undergraduate and graduate students were hired on a part-time basis to make

written and audio recordings of classroom interactions in the preschool module intervention, and to do the testing at the conclusion of the intervention (along with Dr. Riley). The USU staff met each Friday during the intervention, for about one hour to discuss any problems or modifications in the program.

Sample

The teaching modules and toys were designed for three grade levels: preschool (ages 3-4), second grade (ages 7-8) and fourth grade (ages 9-10). These age groups represent strikingly different social, sexual and cognitive periods in a child's development.

The pre-schooler, possibly experiencing his/her first separation from home, has well-formed ideas about what girls and boys do based on physical differences between the sexes, on observations of the division of labor around the home, and on occupational categorization as stereotypically presented by television and other media.

Second graders are individuals with their own personalities. Their abilities are apparent and real interests are beginning to develop. Both sexes still need and enjoy much active, rough and tumble play but sex differences are increasingly apparent. Boys tend to be louder and more boisterous than girls, who are turning to quieter activities that are deemed more sex appropriate, such as jacks and jump rope. Both groups are verbal and enjoy talking. They put away much of their fantasy and imaginative play of earlier years and relate more to the immediate environment, community, nation and even the world. Peer groups take on a new importance, and friends and membership in groups mean a great deal. This

age group tends to be fairly conforming, afraid of doing that which is different because they quite accurately fear that they will be left out.

Fourth graders are more likely to believe that social roles reflect desires and duties. They tend to believe people do things because they want to, yet they clearly prefer sex-typed activities and same-sex friends. The gang or group is very important to this aged child. Such groups provide feelings of belonging and of being like others. Because girls approach puberty earlier than boys, some girls in this age group may be less absorbed with their peer groups than boys, although they are still important. It has been suggested that by fourth (O'Hara, 1962; Riley and Powers, 1977) or fifth grade (Guttentag and Bray, 1976) occupational alternatives may be fairly crystalized. For example, O'Hara (1962) found that fourth grade girls' visions of occupations open to them were limited to those of nurse, teacher, mother, or secretary. Fourth grade boys had a much wider range of acceptable occupations.

Our sample consisted of three classes of pre-schoolers enrolled in the Child Development Laboratory of the Department of Family and Human Development at Utah State University, and three classes each of second and fourth graders at three local public schools. These schools were selected because of their similarity in terms of socioeconomic status of the students' parents. All draw from predominantly middle class areas in the community.

Research Design

Of the three classes at each grade level, one served as a control group. That is, one class at each level had no module or toy intervention. In addition, in one class at each grade level, the teacher of the class

utilized our modules for a certain time period each day over a specified block of weeks (ranging from six to nine weeks). Finally, in a third class, at each grade level, the graduate research assistants (Mr. Campbell and Ms. Toney) came into the classrooms at a specified time for a number of weeks to expose the children to the modules.

The research design, then, addresses the impact of the modules under two conditions: (1) when used by the classroom teachers themselves; and (2) when used by the research staff. The results of both conditions may then be compared with the control groups of non-users. This design is graphically portrayed as follows:

| | | | |
|---|---|---|---|
| Pre-school Experimental Group | R | $X_1$ | $O_1$ |
| Pre-school Experimental Group | R | $X_2$ | $O_2$ |
| Pre-school Control Group | R | | $O_3$ |
| Second Grade Experimental Group | R | $X_1$ | $O_4$ |
| Second Grade Experimental Group | R | $X_2$ | $O_5$ |
| Second Grade Control Group | R | | $O_6$ |
| Fourth Grade Experimental Group | R | $X_1$ | $O_7$ |
| Fourth Grade Experimental Group | R | $X_2$ | $O_8$ |
| Fourth Grade Control Group | R | | $O_9$ |

The project evaluation design of this component is as follows: $X_1$ represents the exposure of the group to the experimental treatment of the teaching module presented by the classroom teacher. $X_2$ represents the exposure of the group to the experimental treatment of the module when presented by the research team. R refers to the randomized assignment of the class to the experimental treatments and the control group. O refers to the measurement of occupational aspirations obtained at the end of the

treatment period.

The post-test-only design was selected because the use of a pre-test prior to the introduction of X could influence receptivity and response to X. This design is preferable to the pre-test post-test design because it gives more control and provides a stronger basis for generalizing to the general population, which is also an unpretested population. Such a design allows us to compare the responses of the control groups with those of the experimental groups. If $O_1$ and $O_3$ and/or $O_2$ and $O_3$ are significantly different, we can attribute these differences to the effect of the experimental treatments (the teacher or researcher presenting the modules). This particular design controls for all the threats to internal validity. Interaction effects are relevant to generalization effects and are accounted for in the post-test-only design. As mentioned previously, generalization is never fully justified logically with any research design; consequently, external validity is inconclusive. An extended discussion of this argument is presented by Campbell and Stanley (1963).

In the first experimental condition (teacher administered modules), the teachers were allowed to begin the modules whenever they chose, after January 1, 1979. Their timing tended to coincide with ours. The second experimental condition (researcher administered modules) ran from January 1, 1979, to March 15, 1979, in the pre-school setting. Researchers interacted with pre-schoolers four days a week for 20 minutes each time. The second grade module was used from February 1, 1979 to April 15, 1979, four days a week for 30 minutes each time. The fourth grade module was presented five days a week from February 1, 1979 to March 15, 1979 for 30 minutes each day. Tables 2.1 through 2.4 indicate the distribution of the sample by group, grade and sex.

Table 2.1. Subjects by Grade and Group.

| Grade | Experimental Researchers | Experimental Teacher | Control | Total |
|---|---|---|---|---|
| Preschool | 19 | 20 | 20 | 59 |
| Second | 25 | 49* | 24 | 98 |
| Fourth | 29 | 29 | 20 | 78 |

*Two different teachers administered module.

Table 2.2. Subjects in Researcher Administered Module Condition by Grade and Sex.

| Grade | Female | Male | Total |
|---|---|---|---|
| Preschool | 9 | 10 | 19 |
| Second | 14 | 11 | 25 |
| Fourth | 14 | 15 | 29 |

Table 2.3. Subjects in Teacher Administered Module Condition by Grade and Sex.

| Grade | Female | Male | Total |
|---|---|---|---|
| Preschool | 11 | 9 | 20 |
| Second | 22 | 27 | 49 |
| Fourth | 16 | 13 | 29 |

Table 2.4. Subjects in Control Condition by Grade and Sex.

| Grade | Female | Male | Total |
|---|---|---|---|
| Preschool | 11 | 9 | 20 |
| Second | 11 | 13 | 24 |
| Fourth | 8 | 12 | 20 |

Note: All tables include only the subjects that were tested, some are missing due to absences.

## Methods of Data Collection

### Pre-School Interviews

Pre-school children were asked a series of questions by male and female interviewers they had not seen before (to avoid response bias). (See Appendix B for the complete questionnaire.) Children were first asked what they would like to be when they grow up. Following this they were asked to verbally list jobs girls and boys can do when they grow up. To further test the module effect, the interviewer mentioned 13 different occupations, all vocations discussed in the modules, and asked if a girl and/or a boy could do that job when she/he grew up.

### Second Grade Interviews

The second graders were asked to verbally complete a three-part questionnaire. The questions in Part I were open-ended, children were asked what they want to be when they grow up, what toy or game they liked the most in class, and what kind of work their parents do. Part II was a

listing of 23 occupations discussed in the modules. As the interviewer named each occupation, children were asked: "Can a man do that job? Can a woman?" The final section, Part III, entailed showing each child eight pictures and asking them to choose between two at a time, indicating the one they would most like to do when they grew up. Four of the pictures were of stereotypically male jobs: doctor, pilot, police officer and newscaster; four were of traditionally female jobs: nurse, homemaker, secretary and teacher (see Appendix B for the complete interview schedule).

Fourth Grade Interview

The fourth graders also had a three-part questionnaire, very similar to the one administered to the second graders. However, the fourth grade children were allowed to fill out Part I and II themselves. In Part III, interviewers again showed the students pictures and asked them to rank them through a process of elimination. The traditionally male occupations depicted were construction worker, doctor, pilot and business executive; the female-typed jobs were nurse, homemaker, secretary and nutritionist. (This questionnaire is also in Appendix B.)

## Statistical Analysis

### Measurement of Dependent Variables

The effect of the experimental treatment was assessed by comparing values on four dependent variables: (1) percent male, (2) traditionalism, (3) sex typing, and (4) traditional picture ranking. Use of these four variables allowed an in-depth comparison on slightly different dimensions. Each dependent variable is described below.

1. Percent Male refers to the proportion of males in the occupation to which the respondent aspires (all children were asked what work they would like to do as an adult). A percentage (based on the distribution of men in that occupation) was assigned to each response, as well as an occupational code. The sex ratio was determined by reference to the 1970 U.S. Census.[2] A percent of males for selected occupations was computed for both males and females in the experimental and control groups and comparisons were made using an analysis of variance.

2. Traditionalism is an index of the extent to which the respondent agreed with traditional sex typing of occupations. For each occupation listed in Part III of the preschool interview and Part II of the second and fourth grade interviews (see Questionnaire in Appendix B) the investigators judged whether the occupation is traditionally considered male or female. If this could not be determined unequivocally for an occupation, the occupation was deleted from the scale. The respondent's traditionalism score was incremented by one for each occupation that was sex-typed along traditional lines. Mean traditionalism scores for each subgroup were compared using analysis of variance.

3. Sextyping is a slight variation of the traditionalism variable. It refers to the number of occupations listed in this same section that the respondent said could be performed only by males or only by females. It, therefore, indicates the absolute amount of sextyping of the listed occupations without reference to the way these occupations are sex typed in our society. The mean number of occupations sex typed (by sex, grade and group) was computed for purposes of comparison.

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[2]It is recognized that there may have been changes in the occupational sex ratio in the past decade; however, 1980 census data is not yet available. Thus, this is our best estimate.

4. Traditional Picture Ranking is a dependent variable which reflects the respondent's ranking of the perceived desirability of the eight jobs depicted in the pictures.[3] As mentioned, four of the pictures show occupations which are (in the U.S.) traditionally male and four which are traditionally female. Girls were shown pictures of women performing all eight jobs and boys were shown pictures of men in the eight roles.

The value given the picture ranking variable is the number of occupations the respondent ranking in the top four selections that are traditional for his or her sex. If a female, for example, ranked all the "female" occupations in her top four choices, she was given a score of 4. If she ranked one male occupation anywhere in the top four, she was given a score of 3. Thus, this variable has a range of 0 (in the case where none of the top four occupations are traditional for the respondents sex) to 4 (when all of the top four occupations are traditional to the respondent's sex). The degree of traditional ranking of occupations by sex of the respondent and by group (experimental or control) was examined with standard contingency table analysis.

## Independent Variables

Three independent variables are of importance in the analysis of these data. The first is group membership. Our foremost interest is in the effect of the modules and toys; thus we compared the differences in responses to the dependent variables of the control groups, teacher-administered module groups and researcher-administered module groups. The second independent variable is grade level. We compared the receptivity of children at

[3]Preschool children are not included, as they were not shown pictures.

each grade level to determine if age makes a difference in response. Finally, sex of the child was a variable of interest. We focused on whether males or females are more or equally receptive to change in attitude.

# CHAPTER THREE

## DATA ANALYSIS

This chapter focuses on the outcomes of our intervention procedures at the three grade levels. Responses from each grade have been analyzed separately.

### Preschool Analysis

Table 3.1 indicates the average percentage of males in the occupations preschool children aspired to. Unfortunately we have no teacher-administered module condition for the preschool sample because the teacher did not use the module at all. She did, however, have the toys and games in her classroom so the children were exposed to one aspect of the experimental treatment. With this in mind, we move on to the analysis.

Table 3.1. Mean Percent Males in Occupations Selected, by Sex and Group, in the Preschool Sample.

| | SEX* | | | |
|---|---|---|---|---|
| | Female ** | | Male | |
| Group | Mean | S.D. | Mean | S.D. |
| Experimental (Researchers) | 37.4% ( 9) | 40.7 | 93.10% (10) | 8.6 |
| Experimental (Teacher) | 9.5% (11) | 21.1 | 93.13% ( 9) | 9.4 |
| Control | 7.8% ( 9) | 16.8 | 90.44% ( 8) | 18.0 |
| Totals (N) | (29) | | (27) | |

*Effect of Sex $p < .001$
**Between group differences $p = .05$

Means were determined for the experimental and control conditions by sex. Sex of respondent was, of course, the most important factor in the selection of occupations, regardless of group. Males in all groups chose occupations more than 90 percent male. Females in both the experimental teacher group and in the control group chose occupations with less than 10 percent males. Average percent male in the experimental researcher group of females was about 37 percent. This was the only significant group effect ($p = .05$). The experimental teacher group did not differ significantly from the control groups for either males or females. However, a difference was not necessarily expected since they were exposed only to the toys and not the modules.

We would argue that boys would not differ by group because the class as a whole was exposed to traditionally male alternatives, those choices were reinforced for them and they did not gravitate toward role reversals (perhaps because society's message is all too clear).

Table 3.2 shows the percentage of males and females in the experimental researcher group and the control group selecting occupations with a particular percentage of males.[4] One-third of the females in the experimental condition chose occupations almost exclusively female (0-10 percent male) in contrast with almost 78 percent of the control group. About 55 percent of the girls exposed to the modules chose occupations 0-20 percent female and nearly 89 percent of the control group girls. None of the control group girls selected an occupation with more than 50 percent males, but one-third of the researcher group girls did. The boys were very traditional in both groups, the boys in the researcher condition even slightly more so.

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[4]The experimental teacher group was excluded because of the teacher's weak participation in the project.

It appears that the male role reversal toys did not have a great impact.

Table 3.2. Percentage of Males in Occupational Choices of Preschool Subjects by Sex and Group.

| Percentage of Males in Occupational Choices | Researchers | | Control | |
|---|---|---|---|---|
| | Female | Male | Female | Male |
| 0-10% | 33.3 (3) | | 77.8 (7) | |
| 11-20% | 22.2 (2) | | 11.1 (1) | |
| 21-30% | 11.1 (1) | | | |
| 31-40% | | | | |
| 41-50% | | | 11.1 (1) | 11.1 (1) |
| 51-60% | | | | |
| 61-70% | | | | 11.1 (1) |
| 71-80% | 11.1 (1) | 10.0 (1) | | |
| 81-90% | | 20.0 (2) | | |
| 91-100% | 22.2 (2) | 70.0 (7) | | 77.8 (7) |
| Totals (N) | 100.0 (9) | 100.0(10) | 100.0 (9) | 100.0 (9) |

Mean "traditionalism" scores broken down by groups and sex are shown in Table 3.3. In their responses to whether boys and/or girls can do any of 13 different occupations, children in the researcher group were less traditional than children in either the teacher or the control groups ($p < .05$). Furthermore, females and males within the researcher group were not significantly different from the control group. However, interesting (although statistically nonsignificant) differences did occur by sex between the teacher and control groups. Females in the teacher group were less traditional than females in the control group; males in the teacher group were actually more traditional than their counterparts in the control group.

Table 3.3 Mean Traditionalism Scores by Group and Sex for Preschool Sample.

| Group | Group Total* | Sex | |
|---|---|---|---|
| | | Female | Male |
| Experimental (Researchers) | .68 (19) | .89 ( 9) | .50 (10) |
| Experimental (Teacher) | 2.58 (19) | 1.82 (11) | 3.63 ( 8) |
| Control | 2.53 (19) | 3.13 ( 8) | 2.09 (11) |
| Totals (N) | (57) | (28) | (29) |

*Between group differences $p < .05$
Note: The higher the score, the greater the traditionalism

A similar pattern occurs in Table 3.4 in the average number of the 13 occupations sextyped by group and sex. Children in the researcher group sextyped fewer occupations than children in the teacher or control groups ($p = .12$). This difference is particularly pronounced among the females, who averaged less than one sextyped occupation in the researcher group and over four in the control group ($p = .05$). Males did not differ significantly in their sextyping by treatment group. It is interesting to note, however, the males averaged less than half the number of sextyped occupations in the control group than did females.

Table 3.4. Number of Occupations Sextyped* by Group and Sex for the Preschool Sample.

| Group | Group Total** | Sex | |
|---|---|---|---|
| | | Female | Male |
| Experimental (Researchers) | .83 (18) | .863 ( 8) | 1.00 (10) |
| Experimental (Teacher) | 2.[illegible]7 (17) | 1.70 (10) | 3.57 ( 7) |
| Control | [illegible].87 (15) | 4.17 ( 6) | 2.00 ( 9) |
| Totals (N) | (50) | (24) | (26) |

*of a possible 13
** $p = .12$

## Second Grade Analysis

The mean percent of males in occupations selected by children when asked what they would like to be when they grow up is indicated in Table 3.5. Two different teachers administered the module at this grade level; thus, the data for each of their classes are included.

Table 3.5. Mean Percent Males in Occupations Selected by Sex and Group in the Second Grade Sample.

| Group | Sex | | | |
|---|---|---|---|---|
| | Female* | | Male** | |
| | Mean | S.D. | Mean | S.D. |
| Experimental (Researchers) | 49.1% (14) | 35.8 | 95.1 (10) | 6.4 |
| Experimental (Teacher 1) | 32.6 (10) | 36.1 | 96.6 (12) | 2.3 |
| Experimental (Teacher 2) | 42.8 (11) | 40.0 | 92.3 (14) | 9.4 |
| Control | 11.0 (11) | 16.9 | 82.6 (13) | 16.8 |
| Totals (N) | | (46) | | (49) |

*Between group differences $p < .05$
**Between group differences $p < .01$

Mean percent males in occupations aspired to by children in the second grade is broken down by treatment group and sex. The researcher and two teacher groups differed significantly from the control groups for both females and males. The average percent males in occupations selected by females in the control group was only 11 percent and in the researcher group 49.1 percent, indicating girls exposed to the modules perceive a greater range of alternatives. Contrary to expectations, the average proportion of males in occupations selected by male children in the research-

er and teacher groups was higher than in the control groups and this difference was statistically significant at the .01 level. There was no substantial difference between the researcher and teacher groups for either females or males. However, the percentages themselves suggest a slightly greater effectiveness on the part of the researchers than the teachers.

Table 3.6 indicates the percentage of males in the occupational choices of the second grade sample. Unfortunately, the control sample is rather small by comparison to the three experimental groups but it appears that some important differences exist. Twenty percent of the females exposed to the module selected occupations 91-100 percent male while none of the control group girls chose any occupations higher than 60 percent male. In fact, 91 percent of the control girls chose occupations less than 20 percent male, and only 49 percent of the experimental females. Again, males did not change much, 92 percent of the control group boys chose occupations over 60 percent male, and 100 percent of the experimental group. It appears that the modules somewhat modified female children's responses in the direction of less stereotypical choices.

Table 3.7 shows the mean "traditionalism" scores based on responses to a list of 23 jobs and the question of whether men and/or women can do any given job of the 23. This table shows substantially less traditionalism among children in the researcher and teacher groups compared with the control group. This is true for both females and males who do not differ appreciably within treatment groups. The effect of the experimental and teacher groups on reducing sextyping of occupations appears to be equivalent. Virtually the same pattern is duplicated in Table 3.8 which shows the

Table 3.6. Percentage of Males in Occupational Choices of Second Grade Subjects by Sex and Group.

| Percentage of Males in Occupational Choices | Experimental | | Control | |
|---|---|---|---|---|
| | Female | Male | Female | Male |
| 0-10% | 28.6 (10) | | 63.6 ( 7) | |
| 11-20% | 20.0 ( 7) | | 27.3 ( 3) | |
| 21-30% | 2.9 ( 1) | | | |
| 31-40% | | | | |
| 41-50% | | | | 7.7 ( 1) |
| 51-60% | 11.4 ( 4) | | 9.1 ( 1) | |
| 61-70% | 8.6 ( 3) | 2.8 ( 1) | | 23.1 ( 3) |
| 71-80% | 8.6 ( 3) | 5.6 ( 2) | | 15.4 ( 2) |
| 81-90% | | 2.8 ( 1) | | |
| 91-100% | 20.0 ( 7) | 88.9 (32) | | 53.8 ( 7) |
| Totals (N) | 100.0 (35) | 100.0 (36) | 100.0 (11) | 100.0 (13) |

Table 3.7. Mean Traditionalism Scores* by Group and Sex for Second Grade Sample.

| Group | Group Total** | Sex | |
|---|---|---|---|
| | | Female | Male |
| Experimental (Researchers) | 2.20 (25) | 2.50 (14) | 1.82 (11) |
| Experimental (Teacher 1) | 3.32 (22) | 3.60 (10) | 3.08 (12) |
| Experimental (Teacher 2) | 2.08 (24) | 2.40 (10) | 1.86 (14) |
| Control | 10.46 (24) | 9.64 (11) | 11.15 (13) |
| Totals (N) | (95) | (45) | (50) |

*The higher the score, the greater the traditionalism.
**Between group differences $p < .0001$

number of sextyped occupations by group and sex. Again the researcher and teacher groups sextyped significantly fewer occupations than the control group. It is somewhat surprising to note that, on the average, children in the control group sextyped slightly over half of the 23 listed occupations ($\bar{X}$ = 12), while the experimental groups sextyped only two to four of the jobs.

Table 3.8. Mean Number of Occupations Sextyped* by Group and Sex for the Second Grade Sample.

| Group | Group Total** | Sex: Female | Sex: Male |
|---|---|---|---|
| Experimental (Researchers) | 2.52 (25) | 2.86 (14) | 2.09 (11) |
| Experimental (Teacher 1) | 3.82 (22) | 4.10 (10) | 3.58 (12) |
| Experimental (Teacher 2) | 2.42 (24) | 3.10 (10) | 1.93 (14) |
| Control | 12.04 (24) | 11.27 (11) | 12.69 (13) |
| Totals (N) | (95) | (45) | (50) |

*Of a possible 23
**Between group differences $p < .0001$

Table 3.9 reports the results of the ranking of pictured occupations by children in the second grade sample. All of the children in the sample ranked either three or four occupations that were traditional for their sex in the top four. Although a greater proportion of the children who ranked one nontraditional occupation in the top four (score of three) are in the researcher and teacher groups than in the control group, this difference does not reach statistical significance. Again, it appears that the researchers are more effective than the teachers.

Breaking these findings down by sex for the experimental and control groups, we find in Table 3.10 a larger proportion of the females in the experimental group ranked one nontraditional occupation in the top four

Table 3.9. Number of Pictured Occupations Traditionally Ranked by Group For Second Grade Sample (In Percentages).

| Number of Traditionally Ranked Occupations | GROUP | | | |
|---|---|---|---|---|
| | Researchers | Teacher 1 | Teacher 2 | Control |
| 3 | 32.0 ( 8) | 18.2 ( 4) | 28.0 ( 7) | 12.5 ( 3) |
| 4 | 68.0 (17) | 81.8 (18) | 72.0 (18) | 87.5 (21) |
| Totals (N) | 100.0 (25) | 100.0 (22) | 100.0 (25) | 100.0 (24) |

Table 3.10. Number of Pictured Occupations Traditionally Ranked by Group and Sex for Second Grade Sample (In Percentages).

| Number of Traditionally Ranked Occupations | GROUP | | | |
|---|---|---|---|---|
| | Experimental | | Control | |
| | Female* | Male** | Female | Male |
| 3 | 42.9 ( 6) | 18.2 ( 2) | 9.1 ( 1) | 15.4 ( 2) |
| 4 | 57.1 ( 8) | 81.8 ( 9) | 90.9 (10) | 84.6 (11) |
| Totals (N) | 100.0 (14) | 100.0 (11) | 100.0 (11) | 100.0 (13) |

*$p = .15$, Kendall's $Tau_B = .37$; $p = .03$, $Tau_C = .33$

**$p = .71$

than did eitherfemales or males in the control group. The girls, therefore, appear to have been affected by the experimental treatment (Kendall's $Tau_B$ = .37, p= -.15); the boys in the experimental and control group ranked occupations virtually the same. Again, this is consistent with the expectation that male dominated jobs are more attractive than female dominated ones. While the males are similar regardless of group, the females show a strong difference with 91 percent of control group girls selecting all traditional occupations in their top four choices, but only 57 percent of the experimental girls.

Fourth Grade Analysis

Among the males in the fourth grade sample, there is little difference by group in the mean percent of males in the selected occupations (see Table 3.11). Most of the boys indicated a desire to work in occupations that are close to 90 percent male. An interesting finding among the females of the fourth grade sample was the occupations they chose are relatively high in proportion male. Females in both the control and experimental researchers groups chose occupations tht averaged nearly 50 percent male (47 percent and 50.1 percent, respectively). Recall that in the second grade sample the female control group aspired to occupations that averaged 11 percent male and the female control in the preschool sample desired occupations that averaged 7.8 percent male. However, the girls in the teacher group had a lower percent male in their occupational selections than the control or the other experimental group. In examining the responses, it seems due to many of the girls in that group wanting to be teachers. In practically all cases female occupational choices showed greater variation in percent male than did occupations chosen by males (compare standard devia-

tions). Overall, treatment group appeared to have little effect on occupational choices of the children.

Table 3.11. Mean Percent Males in Occupations Selected by Females and Males in the Fourth Grade Sample.

| | Sex | | | |
|---|---|---|---|---|
| | Female* | | Male | |
| Group | Mean | S.D. | Mean | S.D. |
| Experimental (Researchers) | 50.1% (14) | 37.7 | 88.7% (15) | 12.6 |
| Experimental (Teacher) | 22.6 (16) | 26.1 | 87.8 (13) | 13.0 |
| Control | 47.0 ( 7) | 38.6 | 91.0 (11) | 11.8 |
| Totals (N) | (37) | | (39) | |

*Between group differences p = .0691

Table 3.12 indicates the percentage of males in the occupational choices of fourth grade girls and boys in each group. This table suggests that most fourth grade boys, regardless of group, selected occupations 81-100 percent male, 71 percent in the experimental group and 91 percent in the control group. For females in the control group 43 percent chose occupations 61-70 percent male and 43 percent selected occupations under 20 percent male. The experimental group females were somewhat less traditional, with 23 percent choosing occupations 71-100 percent male, but only 14 percent of the control females fell into this category.

However, 60 percent of the girls in the experimental condition chose occupations with 20 percent or less males in them. Insofar as personal aspirations, fourth grade girls, regardless of treatment condition, are fairly traditional.

Table 3.12. Percentage of Males in Occupational Choices of Fourth Grade Subjects, by Sex and Group.

| Percentage of Males in Occupational Choices | Experimental | | Control | |
|---|---|---|---|---|
| | Female | Male | Female | Male |
| 0-10% | 23.3 ( 7) | | 28.6 ( 2) | |
| 11-20% | 36.7 (11) | | 14.3 (1) | |
| 21-30% | | | | |
| 31-40% | 10.0 ( 3) | | | |
| 41-50% | | | | |
| 51-60% | | 3.6 ( 1) | | 9.1 ( 1) |
| 61-70% | 6.7 ( 2) | 10.7 ( 3) | 42.9 ( 3) | |
| 71-80% | 6.7 ( 2) | 14.3 ( 4) | | |
| 81-90% | 3.3 ( 1) | 10.7 ( 3) | | 27.3 ( 3) |
| 91-100% | 13.3 ( 4) | 60.7 (17) | 14.3 ( 1) | 63.6 ( 7) |
| Totals (N) | 100.0 (30) | 100.0 (28) | 100.0 ( 7) | 100.0 (11) |

Note: Teacher and researcher groups are combined in the experimental condition.

Treatment group affected the attitudes of the children toward the sextyping of occupations. Tables 3.13 and 3.14 indicate significantly less traditionalism and sextyping among children in the experimental groups compared to the controls. Furthermore, this effect appears to be equivalent for both females and males. Table 3.14 shows the actual average number of sextyped occupations by group and sex. We find the control group designating about 12 of the 24 occupations as male or female, but only four of the 24 were designated, on the average as male or female by the experimental groups. The males in the researcher group, however, sextyped nearly seven occupations. Males, overall, appear to be more resistant than females.

Table 3.13. Mean Traditionalism Scores by Group and Sex for Fourth Grade Sample.

| Group | Group Total* | Sex | |
|---|---|---|---|
| | | Female | Male |
| Experimental (Researchers) | 4.88 (24) | 3.50 (12) | 6.25 (12) |
| Experimental (Teacher) | 3.23 (26) | 2.14 (14) | 4.50 (12) |
| Control | 10.18 (17) | 9.29 ( 7) | 10.80 (10) |
| Totals (N) | (67) | (33) | (34) |

Note: The higher the score, the greater the traditionalism.

*Between group differences $p < .0001$.

Table 3.14. Mean Number of Occupations Sextyped* by Group and Sex for the Fourth Grade Sample.

| Group | Group Total** | Sex | |
|---|---|---|---|
| | | Female | Male |
| Experimental (Researchers) | 5.42 (24) | 4.17 (12) | 6.67 (12) |
| Experimental (Teacher) | 3.46 (26) | 2.21 (14) | 4.92 (12) |
| Control | 11.94 (17) | 11.29 ( 7) | 12.4 (10) |
| Totals (N) | (67) | (33) | (34) |

*Of a possible 24.

**Between group differences $p < .0001$

Table 3.15 shows the results of the picture ranking exercise in the fourth grade classes. All of the children, regardless of group, ranked either three or four occupations traditional for their sex in their top four choices. The differences between the three groups is not significant. Overall, the children were very traditional in their choices, with 88-90 percent selecting four traditional occupations. Breaking these findings down by sex (Table 3.16), it appears that females are only very slightly more likely to choose one nontraditional occupation in their top four choices.

Table 3.15. Number of Pictured Occupations Traditionally Ranked, By Group, for Fourth Grade Sample (In Percentages).

| Number of Traditionally Ranked Occupations | GROUP | | |
|---|---|---|---|
| | Experimental | | |
| | Researchers | Teacher | Control |
| 3 | 12.0 ( 3) | 13.8 ( 4) | 10.0 ( 2) |
| 4 | 88.0 (22) | 86.2 (25) | 90.0 (18) |
| Totals (N) | 100.0 (25) | 100.0 (29) | 100.0 (20) |

Table 3.16. Number of Occupations Traditionally Ranked by Group and Sex for Fourth Grade Sample (In Percentages).

| Number of Traditionally Ranked Occupations | GROUP | | | | | |
|---|---|---|---|---|---|---|
| | Experimental | | | | | |
| | Researchers | | Teacher | | Control | |
| | Female* | Male** | Female | Male | Female | Male |
| 3 | 25.0 ( 3) | 0.0 ( 0) | 12.5 ( 2) | 15.4 ( 2) | 25.0 ( 2) | 0.0 ( 0) |
| 4 | 75.0 ( 9) | 100.0 (13) | 87.5 (14) | 84.6 (11) | 75.0 ( 6) | 100.0 (12) |
| Totals (N) | 100.0 (12) | 100.0 (13) | 100.0 (16) | 100.0 (13) | 100.0 ( 8) | 100.0 (12) |

# CHAPTER FOUR

# CONCLUSIONS

## Empirical Findings

This research addresses two levels of attitude change: first, the potential to influence a child's personal career aspirations and second, the potential to affect perceptions regarding the career alternatives available to males and females without necessarily changing individual preferences. Ideally, we hoped the experimental groups would change in both directions; they would perceive a wider range of choices for themselves as well as others.

Our analysis suggests the modules and toys were to some extent influential in the choices made for self but had far more impact on perceptions of what occupations are acceptable for both sexes. In general terms females, however, were the only ones that changed their personal aspirations, males did not appear to be influenced by role reversals, something we probably cannot expect until those jobs have greater prestige and/or pay in our society. Nevertheless, both sexes in the experimental condition tended to accept the notion that people can do any job, regardless of sex.

## Personal Aspirations

Using the percent of males in the occupation selected and the picture ranking, we examined the personal aspirations of the children. Because the preschool teacher did not use the modules, as promised, we compared the results of the control class and the researchers' class. Examining the question, "what would you like to be when you grow up?" an important

distinction emerged, with the average percent of males in occupations selected by the experimental group girls about 37 percent but only 9.5 percent for the girls in the control group. Males were about the same regardless of group, with between 70 and 75 percent choosing occupations 90-100 percent male. Another finding was the larger standard deviation in the responses of experimental group females (SD=41) than control group females (SD=17), indicating module exposure contributed to an awareness of a wider range of occupational options. However, for males the standard deviation in the experimental condition (SD=9) was smaller than in the control setting (SD=18). This suggests the module reinforced interest in traditionally male occupations and that the role reversal materials did not effectively influence aspirations. Further, an examination of the percent of girls selecting occupations almost totally defined as "women's work" (ie., 0-10 percent male in the occupation) reveals that only one-third of the experimental group girls made such choices as comapred to almost 78 percent of the girls in the control group.

Second grade children apparently were also influenced by the module exposure. This summary compares responses in the researcher group with those in the control group as the teacher group's responses were very similar to the researcher group's responses. Again, the changes were with females and not males. The overall mean percent of males in the occupations selected by second grade girls was about 49 percent but only 11 percent for girls in the control situation. As with preschool girls, the standard deviation was larger (SD=36) than in the control group (SD=17). Also the boys were reversed again, with a standard deviation of 6 for the experimental group and 17 for the control group. Ap-

proximately 89 percent of the experimental group males elected occupations with over 90 percent males but only 54 percent of the control group males did so, indicating again the reinforcement of traditional career roles for males despite the role reversal materials.

Fourth grade aspirations of both the experimental researcher group and the control group are very similar. The researcher group of girls chose occupations with a mean of 50 percent male and control group girls selected occupations with a mean of 47 percent male, indicating both groups are less traditional than girls in the earlier grades.

The mean percent of males in jobs selected by the boys in the researcher group was about 89 percent and 91 percent for the boys in the control group. The standard deviations were larger for girls than boys, almost 38 for researcher group girls and 39 for the control group. They were 13 and 12, respectively, for boys in the experimental and control groups. Interestingly, the fourth grade teacher who presented the modules in her classroom elicited more traditional responses from girls than the other two groups. The mean percent of males in occupations selected was only about 23 percent and the standard deviation was 26.

Another area related to personal aspirations, but not open-ended in nature, were the rankings of pictures by the children. Second and fourth grade children were asked to rank eight pictures of people in different occupations according to their preference for that occupation. We analyzed only the top four choices and found that none of the children, regardless of group, selected more than one nontraditional occupation in their top four preferences. In the second grade experimental researcher group nearly 43 percent of the girls ranked one nontraditional career in their

top four but only nine percent of the control group. Of the boys, around 18 percent of those in the experimental researcher group chose one nontraditional career and about 15 percent of the control boys. Once again, we see girls much more amenable to change than boys and girls exposed to the module significantly more open to nontraditional choices than girls not exposed.

With regard to the fourth grade, it appears that the module had no effect on picture ranking. Twenty-five percent of the girls in both the researcher and control groups ranked one nontraditional job in their top four preferences, while none of the boys did. (In the teacher group, the figures are 12.5 percent of the girls and 15.4 percent of the boys.)

Perceived Alternatives

An additional focal point for this study is the broadening of perceptions about what men and women can do in the world of work. This was measured through the children's perceptions of whether men, women or both sexes can do particular jobs. First, we established mean traditionalism scores based on sex-typing of occupations. Preschool experimental females had a mean traditionalism score of .89 and the males, .50, while the control group was much more traditional. The girls had a mean of 3.13 and the boys of 2.09. Second, we compared the actual number of total occupations sex typed. Out of 13 listed occupations, girls in the experimental group classified less than one ($\bar{X}$=.86) occupation as either male or female and experimental group boys, on the average, selected one. In contrast, the control group girls sex typed just over four occupations and the boys sex typed two.

The second grade sample also appeared to be influenced by the modules. The mean traditionalism score for girls was 2.50 in the experimental group and 9.64 in the control condition. Boys were also influenced, mean scores for the experimental condition was 1.82 and 11.15 for the control group. Further, in actual numbers of occupations, only 2.86 of the 23 were sex typed by the girls in the experimental group and only 2.09 by the boys in that setting. This is in contrast to 11.27 jobs sex typed by girls and 12.69 sex typed by boys in the control group. Thus, boys appear to be as influenced as girls.

Finally, in the fourth grade sample, we observed some module effect. It seems that while pesonal aspirations were not affected, attitudes toward the acceptability of both men and women participating in a wide range of alternatives were changed. Of the 24 occupations listed, 4.17 of them were sex typed by the girls in the experimental researcher group and 6.67 by the boys in that group. This compares to 11.29 sex typed by control group girls and 12.4 by control group boys. The teacher administering the fourth grade modules also had an influence, with girls sex typing only 2.21 jobs and the boys, 4.91 of the 23.

Due to budget constraints, the size of the sample employed in this study was necessarily small. This limited the scope of our conclusions and disallowed adequate examination of certain potentially salient variables. In particular, such things as the sex of the teachers and their attitudes regarding sexual equality (both conscious and unconscious) may have influenced their module presentation and consequently its effect on the children.

## The Module Program

This program could be applied to diverse groups without limitations. As indicated in the literature review, children in our culture tend to have limited exposure to women in nontraditional occupations and perhaps this is particularly true of children from lower socioeconomic and/or certain racial or ethnic minority backgrounds. (The toys we selected, as well as those developed, depict men and women of different races in both white collar and blue collar jobs.)

The most likely users of the products and results of this project are preschool and elementary school teachers. The teacher modules should prove to be a valuable tool in the classroom as indicated in comments included with the modules. School counselors may also be interested in this information to help them to break down occupational stereotypes in their counseling procedures. We anticipate that toy manufacturers and/or educational material firms will be interested in the male role reversal models developed by PACT and that they will eventually be openly marketed to interested school systems and parents (see PACT report, next chapter). Thus, this project has the potential for impact in a number of areas.

The cost of implementing these products is reasonable. If a school system wanted to purchase the nonsexist toys utilized in our study, it would cost them around $100. The teacher modules could be purchased for $10 or less.

## Summary

This study focuses on the influence of teaching materials on children's perceptions of career choices for themselves, as well as others. Our

research indicates it is possible to reduce sex role stereotyping of occupations through the use of a multi-dimensional package which includes toys, role playing, stories and discussions of the nature of the world of work.

The evaluation of our intervention effort indicated a greater impact on children's perceptions of whether men, women, or both can do a variety of jobs than on their personal aspirations. Children in the experimental condition were much less likely to sex type occupations than children in the control group. This was true for both males and females at all grade levels. However, when examining personal aspirations we found girls in the experimental group to be much less likely to choose traditionally female careers than boys were to choose traditionally male careers. The role reversal message of the modules and toys did not seem to have much influence on the boys. These findings should come as no surprise in a society that does not lend support in the form of pay or prestige to "women's work." In terms of personal aspirations, girls become increasingly less likely to elect traditionally female roles regardless of group. Preschool and second grade girls seem to have been dramatically influenced by the modules in this regard but by fourth grade it seems they are not as apt to respond traditionally regardless of treatment group.

We argue that teaching materials represent only one of many influences on the sex role socialization of children and that they are an important factor. This kind of work and effort is extremely important in our processes of sexism and discrimination. It suggests our schools could be improved in the area of broadening career options and in reducing sex role stereotyping in occupational choice. It is not in our best national

interest to limit alternatives for any one in the world of work. Occupational choice should be based on interest and ability, not on sex role stereotypes.

# CHAPTER FIVE

## REPORT ON PERFORMANCE OF PACT SUBCONTRACT

Public Action Coalition on Toys (PACT), a nonprofit national consumer organization based in New York City, was asked to undertake two responsibilities for Utah State University. The first was to produce new toys needed for research; the second was to get these new toys (if they proved satisfactory during the research phase) accepted by a commercial firm, as part of its regular line, after the Utah State University/Office of Education project ended.

The time table and plan was as follows:

PHASE ONE Septeber 1, 1978-January 31, 1979

I. Production

A. Design

1. PACT review committee

2. Two professional artists

B. Craftsmen

C. Three sets of play items

PHASE TWO February 1, 1979-August 31, 1979

II. Distribution

A. Methodology

1. Coordination of copyright releases

Publicity

B. Initial reaction of business

C. Future plans

## Products Desired to be Designed

Research by USU's Sociology Department, funded by an earlier Women's Educational Equity Act (WEEA) grant, revealed that the women's movement created pressure and products. Toy companies responded to the demands of feminists to the extent that four or five products appeared on the market which were designed to illustrate to children that both genders can hold the same jobs. The companies even changed job titles, e.g., fireman to fire fighter, mailman to mail carrier, in these four or five sets of materials. Moreover, one company created puzzles for young children showing a female lawyer, a female judge, a female mechanic, a female pilot, a female doctor and a female telephone linesperson. However, the men in the company's puzzles remained in stereotypical professional jobs (e.g., dentist), only their skin colors changed. The request from Utah State to PACT was to design male role-reversal toys for three age groups: pre-schoolers, second graders, and fourth graders. PACT and the USU research team "brain stormed" and did an investigation to come up with jobs typically dominated by, or thought to be limited to, women, such as being a nurse, telephone operator, stewardess, social worker, dental assistant/hygienist, preschool or elementary school teacher, etc.

Additional research was done under the present Career Education grant to see if new products had appeared on the market which could be utilized in experimental classrooms. Funding for toy development was extremely limited under this grant, and there was no sense in duplication. PACT was able to find two puzzles for younger children, in a series on "nurturing males," of male nurses and male nursery school teachers in a Childcraft toy catalog. These toys were originally designed in cooperation

with Women's Action Alliance. Utah State ordered the puzzles but were informed at the last minute that none of the products had ever been produced, so PACT hired a second artist to produce those role models for the Career Education research project.

Since the earlier WEEA-funded Utah State research study had indicated that fourth graders responded best to games, PACT made a diligent search to locate an appropriate game for this study. There was simply no time between October 1 and January 1 to design a new game. PACT advertised in the toy trade press and in Ms. magazine, and sent out 200 letters to appropriate organizations and companies, to no avail. No one came forward with a nonsexist career game that she/he had already designed. PACT did hope the publicity may have inspired designers and game makers to consider such a product in the future.

The only game PACT could locate that lent itself to discussions of expanded career choices was a game called the UN-GAME, which uses cards to give children an opportunity to express their opinions, hopes, and future plans. The game was ordered for the fourth graders but was not particularly popular. It requires active teacher participation to be successful.

PACT hired two toy designers in New York City to produce three sets of play materials: puzzles, match-ups, and lottos. One of the artists approached the subject in a realistic manner, one in a more whimsical manner. The artists were given, by PACT, an exact list of the careers to be depicted, and descriptions on the race and sex of each person to be portrayed. For example, the artist was told that one of the match-ups was to be a female Native American veterinarian.

Utah State paid Patricia Powers, a former faculty member and one of WEEA grant investigators who had moved to the East Coast and who had coordinated earlier PACT efforts, to oversee the sub-contract. Therefore, all of PACT's ideas on occupations to be used were approved by the Utah State researchers, via Powers, before the artists began their sketches.

## Review and Production Processes

PACT utilized four board members as a committee to review the toys (one was a male, one was black, one was an early education college instructor, and the other was the PACT project supervisor, Victoria Reiss, who has 20 years of experience with the toy industry). Members of this committee provided the artists with samples of toys on the market that were similar to what Utah State wanted, with research ideas, with suggestions on appropriate background settings for the figures depicted, with feedback on the realism of the portrayal, etc. For example, one artist drew the tables and chairs too high in the portrayal of the nursery school and this error was caught.

There was no time to have photographs sent to Utah and back for final approval as the time frame was almost impossibly short. Therefore, there was at least one unrealistic background. The female farmer is shown with a hoe in the garden, rather than on a tractor as the Utah State researchers would have preferred. They felt she looked like a gardener, not a farmer. A gardener is not an uncommon role for women, while a farmer is.

After the artist finished the color pictures, the sketches had to be made into prints, put on boards, cut up and then laminated so they

would withstand "wear and tear." The puzzles had to be jig-sawed, with increasing complexity the older the children were.

In total: 11 puzzles were designed and 4-6 sets were made of each; 14 match-ups were designed and 6 sets were made; and one lotto, consisting of four sub-parts was designed and four sets were made.

Utah State received most of the products in time to start the research project in early January, but about four of the above items were not ready until the beginning of February (when the second and fourth grade intervention began). PACT located craftspeople and negotiated the cheapest prices and the fastest turn-around possible for the product ordered. Some sketches were modified as many as three times by request of the review committee. The final products are of professional quality and are the equivalent of commercial products sold to schools and in toy stores.

## Marketing and Distribution

Between January 1 and July 1, 1979, PACT's only obligations were to coordinate with the contract/grants office at Utah State on payments, to coordinate with the OE project officers Terry Newell and Esther Roney and with the person handling the career education catalog, and to coordinate with the patent and copyright offices for HEW and the Office of Education.

PACT could not make formal overtures to the toy and educational materials companies until the research results were known and until the Office of Education and Utah State University defined the terms under which the new products could be released into the commercial market.

The rationale for releasing the products is that commercial companies are more familiar with production, marketing and distribution systems than the government or the university or even PACT could be, and there-

fore the ideas behind the new products would be disseminated much further by this approach.

Mr. Wooten's office gave PACT the names of two toy company presidents who are advisors to the Bureau of the Handicapped, to help break through the communications barrier that exists in an industry built on secretiveness. (For example, the only reason PACT was given appointments by major toy companies, who ordinarily use only internal toy designers, was because of PACT's reputation as a consumer organization.)

PACT asked HEW's patent office for an opinion on whether the new toys should be patented or copyrighted. PACT was told that since no new technology was involved, PACT was really copyrighting the artist's pictures.

On July 23 and 24, 1979, Patricia Powers, project consultant, and Allenna Leonard, a director of PACT, traveled from Washington, D.C., to New York City to meet with people key to the process of getting the new toys accepted by a commercial company. Interviews were held with Jeff Powell, a representative of Teaching Concepts, and John Hall, a representative of CBS (which owns Child Guidance, Creative Playthings and Gabriel). Powers and Leonard also met with Donna Datre, public relations associate at Toy Manufacturers of America trade association (TMA), and Thom Murn, editor of Playthings magazine. They also visited the showrooms of Playskool, Avalon, and Fisher Price at 200 Fifth Avenue, the toy building.

The representative of the small toy company was far more interested in the new products than the representatives of the huge toy conglomerate. CBS is only interested in innovative technological advances in puzzles, not in conceptual nor ideological advances. CBS is not concerned with social values but with profits, and Mr. Hall said that their own lottos

and educational toys were not selling well enough now, in a time of fancy electronic games. CBS is not interested in more educational toys of any nature. Mr. Hall said that parents would never buy such products at Toy-R-US and similar retail outlets. He suggested appealing to toy companies with strong educational branches that use schools as their outlets. Mr. Powell, on the other hand, was impressed both with the quality (durability and presentation) of the models he was shown and with the style of the products (i.e., not heavy on "message" but agreeable to the eye). He was interested to hear that there were teaching modules available as he would be interested in selling a "package" to a school system.

## Contracts and Royalties

Bill Wooten, Copyright Administrator of the Office of Education, made it clear to Patricia Powers that any toys funded with federal funds must be openly offered to all potentially interested parties (i.e., no sweetheart contracts). Thus, no arrangements can be made with any company until the toys are announced via press releases, advertisements, and personal letters to appropriate companies. All those steps were taken during August 1979.

Utah State researchers, Paul Campbell and Dr. Pamela Riley, sent a preliminary research results report to PACT's board of directors. Even though all project money has been allocated and spent, PACT will continue to seek a toy company or an educational materials company that will accept the items developed and, hopefully, the modules as well. PACT will coordinate with Mr. Campbell, Dr. Riley, and Dr. Marotz-Baden and will use a board member, Myron Kaplan who is a lawyer, to draft an appropriate contract and

to negotiate a settlement. Any settlement made or royalties paid will go 25 percent to Utah State University and 75 percent to PACT. The royalties or settlement will be modest and will basically repay USU and PACT for time spent after the grant period was over. The U.S. Office of Education has waived its financial rights since the sub-contractor is a volunteer-run, non-profit entity and to facilitate the negotiation and dissemination process.

The reader is referred to Appendix C for PACT correspondence with toy companies, HEW and so forth.

# REFERENCES

## REFERENCES

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# APPENDIX A

## TOY LIST

## PRESCHOOL TOY LIST

| Toy | Source | Price |
|---|---|---|
| | **LOANED** | |
| 1. Play Family Action Garage | Fisher Price | |
| 2. Play Family Airport | Fisher Price | |
| 3. Me Doll | The Children's Company | |
| 4. Occupational Clothing for Me Doll | (not commercially available) | |
| | **PURCHASED** | |
| 1. Occupational Puzzles (doctor, lineworker, pilot, mechanic) | The Judy Company<br>310 North Second Street<br>Minneapolis, MN 55401 | $3.30 each |
| 2. Robot Card Career Deck | Fun-Da-Mentals<br>Box 263<br>South Pasadena, CA 91030 | $1.50 |
| 3. Community Careers Flannel Board (#157) | Instructo/McGraw Hill<br>Paoli, PA 19301 | $5.95 |
| 4. When I Grow Up, I Want To Be... (#171, Flannel-board figures) | Instructo/McGraw Hill<br>Paoli, PA 19301 | $8.95 |
| 5. Our Helpers Play People (#7931, stand-up figures) | Milton-Bradley Company<br>Agent: Utah-Idaho School Supply Company<br>155 South State Street<br>SLC, UT 84111 | $6.25 |
| 6. Super Basic Young Erector Set (#33005) | CBS Toys<br>41 Madison Avenue<br>New York, NY 10010 | $12.75 |
| 7. Tinker Toy (311 pieces) | Grand Central Stores | $8.99 |
| 8. Doctor Kit | Grand Central Stores | $1.99 |

## PACT TOYS

1. Generation Puzzles
   - boy and girl dishwashing
   - teenage boy and girl babysitting
   - mother and father bus drivers
   - grandparents storekeeping

2. Jigsaw Puzzles
   - truck driver (#17, 11 pieces & board)
   - flight attendant (#12, 12 pieces & board)
   - veterinarian (#5, 12 pieces & board)
   - librarian (#20, 12 pieces & board)
   - telephone operator (#25, 12 pieces & board)

3. Mix and Match Lotto (two pieces each)
   - secretary
   - ticket seller
   - repair person
   - school cook
   - recreation director
   - bank teller
   - pharmacist
   - interviewer
   - veterinarian
   - dancer
   - dental assistant
   - cashier
   - farmer
   - Coast Guard Petty Officer

## TOY DESCRIPTIONS

### PRESCHOOL TOYS

1. FISHER-PRICE PLAY FAMILY ACTION GARAGE: This toy is a model garage with hand crank vehicle elevator, gasoline pump, two-level parking, drive up ramp, and four cars, all out of plastic. Up to five children can play with cars, elevator and pump easily; however, more than five children means one has to wait to take turns in an activity. The elevator operator (crank) was the most popular activity, jealously guarded once obtained, and the focus of the most discord.

2. FISHER-PRICE PLAY FAMILY AIRPORT. Made of plastic, this toy is a model airport with control tower, passenger ramp, drive up baggage area and illustrations of terminal activities.

3. ME DOLL: A soft Raggedy Ann-type doll, the unique feature of the Me Doll is the face. Instead of a face this doll has a large, round, unbreakable mirror. The clothing which comes with the doll is a removable, two-piece outfit, apparently casual slacks and a smock. We had made other sets of clothing: pilot's shirt and pants, tie and uniform coat, police officer's uniform pants and shirt with badge, doctor's white pants and coat, nurse's white pants and shirt, mechanic's overalls, construction worker's overalls, business suit and dress blouse and vest, and teacher's casual shirt and pants. The clothing was easy to put on and take off the Me Dolls.

4. JUDY COMPANY OCCUPATIONAL PUZZLES: Show females as a doctor, mechanic, telephone lineworker and pilot. The females are caucasian.

5. ROBOT CARD DECK: Contains 19 pairs of cards, each card depicting a male and a female in the same occupation. The deck also includes two robot "wild" cards and six blank cards for other careers not depicted. The instruction booklet in the plastic case describes 14 activities and questioning strategies. Races are depicted.

6. COMMUNITY CAREERS FLANNEL BOARD: Contains 27 figures, males and females depicted, in the same occupations, for use on a flannel board. Each occupation has a label card and some appurtenance equipment for the occupation. Additional blank labels are included, flannel board is not. Different races are depicted.

7. INSTRUCTO/MCGRAW HILL "WHEN I GROW UP, I WANT TO BE,": Has a male and a female figure with interchangeable occupational uniforms and clothing and equipment for a dozen occupations. Everything is made of felt and is used on a flannel board.

8. MILTON-BRADLEY OUR HELPERS PLAY PEOPLE: A set of six pairs of cardboard stand-up figures with plastic stands, illustrating males and females in the same occupations. Different races are depicted.

9. SUPER BASIC YOUNG ERECTOR: a set of large plastic plates, beams, wheels, nuts and bolts for constructing simple designs. The instructions contain several designs.

10. TINKER TOY SET: The 315 piece set in a barrel contains the full assortment of Tinker Toy shapes and sizes.

11. DOCTOR KIT: Consists of a plastic doctor bag, stethoscope, hypodermic, thermometer, reflex hammer and pressure cuff.

PACT TOYS

1. GENERATION MATCH: Depicts four pairs of males and females, each pair shows different generations. Members of each generation pair are in the same occupation; the occupations are labeled. Each pair is divided into a two piece match set for scrambling and matching. Pieces are laminated on hardboard.

2. JIGSAW PUZZLES: Include a black female trucker, white male flight attendant, elderly white female veterinarian, oriental male librarian and Chicano male telephone operator. Made of laminated hardboard, the puzzles are quite durable.

3. MIX AND MATCH LOTTO: Two piece simple puzzles depicting various races and males and females in a set of 13 different occupations. The sets are of the same material as the other PACT puzzles.

# SECOND GRADE TOY LIST

| Toy | Source | Price |
|---|---|---|
| **PURCHASED** | | |
| 1. Robot Card Game Decks | Fun-Da-Mentals<br>Box 263<br>South Pasadena, CA 91030 | $1.50 |
| 2. Community Careers Flannel Board Set (#157) | Instructo/McGraw Hill<br>Paoli, PA 19301 | $5.95 |
| 3. Super Basic Young Erector Set | CBS Toys<br>41 Madison Avenue<br>New York, NY 10010 | $12.75 |
| 4. Tinker Toy (311 pieces) | Grand Central Stores | $8.99 |
| 5. Our Helpers Play People (#7931) | Milton-Bradley Company<br>Agent: Utah-Idaho School Supply Company<br>155 South State Street<br>SLC, UT 84111 | $6.25 |
| 6. Doctor Kit | Grand Central Stores | $1.99 |
| 7. The Ungame | The Ungame Company<br>1440 South State College Blvd.<br>Bldg. 2-D<br>Anaheim, CA 92806 | |

**PAST TOYS**

| | | |
|---|---|---|
| 1. Mix and Match Lotto (two pieces each) | secretary | veterinarian |
| | ticket seller | dancer |
| | repair person | dental assistant |
| | school cook | cashier |
| | recreation director | farmer |
| | bank teller | Coast Guard Petty Officer |
| | pharmacist | |
| | interviewer | |
| 2. Jigsaw Puzzles | nurse (41 pieces) | |
| | teacher (55 pieces) | |
| 3. Board Puzzles | truck driver | veterinarian |
| | flight attendant | librarian |
| | telephone operator | |

## SECOND GRADE TOY DESCRIPTIONS

1. JUDY COMPANY OCCUPATIONAL PUZZLES: Show females as a doctor, mechanic, telephone lineworker and pilot. The females are caucasian.

2. ROBOT CARD DECK: Contains 19 pairs of cards, each card depicting a male and a female in the same occupation. The deck also includes two robot "wild" cards and six blank cards for other careers not depicted. The instruction booklet in the plastic case describes 14 activities and questioning strategies. Different races are depicted.

3. COMMUNITY CAREERS FLANNEL BOARD: Contains 27 figures, males and females depicted, in the same occupations, for use on a flannel board. Each occupation has a label card and some appurtenance equipment for the occupation. Additional blank labels are included, flannel board is not. Different races are depicted.

4. WHEN I GROW UP, I WANT TO BE...: Has a male and a female figure with interchangeable occupational uniforms and clothing and equipment for a dozen occupations. Everything is made of felt and is used on a flannel board.

5. OUR HELPERS PLAY PEOPLE: A set of six pairs of cardboard stand-up figures with plastic stands, illustrating males and females in the same occupations. Different races are depicted.

6. SUPER BASIC YOUNG ERECTOR: A set of large plastic plates, beams, wheels, nuts and bolts for constructing simple designs. The instructions contain several designs.

7. UNGAME: A board game with moveable markers and questioning cards. The game is best suited for four players, ages 7 and up. The object of the game is to examine values and interpersonal communication in a non-threatening game environment.

## PACT TOYS

1. GENERATION MATCH: Depicts four pairs of males and females, each pair shows different generations. Members of each generation pair are in the same occupation; the occupations are labeled. Each pair is divided into a two-piece match set for scrambling and matching. Pieces are laminated on hardboard.

2. JIGSAW PUZZLES: Fairly large sized pieces (at least 1 square inch each) and are made of laminated hardboard. The puzzles depict a male teacher and a male nurse, with labeled occupations.

3. MIX AND MATCH LOTTO: Two-piece simple puzzles depicting various races and males and females in a set of 13 different occupations. The sets are of the same paterial as the other PACT puzzles.

## FOURTH GRADE TOY LIST

| Toy | | Source | Price |
|---|---|---|---|
| | | PURCHASED | |
| 1. | Robot Card Game Decks | Fun-Da-Mentals<br>Box 263<br>South Pasadena, CA 91030 | $1.50 |
| 2. | Super Sandwich Game | Teaching Concepts, Inc.<br>Box 2507 Grand Central Station<br>New York, NY 10017 | $12.95 |
| 3. | Space Hop Game | Teaching Concepts, Inc. | $12.95 |
| 4. | Endangered Species | Teaching Concepts, Inc. | $ 9.95 |
| 5. | Electric Motorized Erector Set (#36148) | CBS Toys, Inc.<br>41 Madison Avenue<br>New York, NY 10010 | $24.95 |
| 6. | Junior Executive Game | The Toy Center<br>2205 Highland Drive<br>SLC, UT 84005 | $4.95 |
| 7. | Ungame | The Ungame Company<br>1440 S. State College Blvd.<br>Bldg. 2-D<br>Anaheim, CA 92806 | $4.59 |
| | | PACT TOYS | |
| 1. | Jigsaw Puzzles | male teacher (55 pieces)<br>male nurse (41 pieces) | |

## FOURTH GRADE TOY DESCRIPTIONS

1. ROBOT CARD DECK: Contains 19 pairs of cards, each card depicting amale and a female in the same occupation. The deck also includes two robot "wild" cards and six blank cards for other careers not depicted. The instruction booklet in the plastic case describes 14 activities and questioning strategies. Different races are depicted.

2. SUPER SANDWICH: A board game for four players, each with a plastic, reuseable score card for tabulating nutritional contents of various foods as indicated by the cards which correspond to each move on the board. Nutritional planning and decision-making are the objectives of the game.

3. SPACE HOP: A board game for four players in which each player moves a marker according to dice count, toward a solar system feature which must be named from factual clues. Successful identification of solar system features is the game objectives.

4. ENDANGERED SPECIES: A four player board game wherein players garner points through board moves in order to "save" a selected endangered animal. Ecological awareness is the intention of the game.

5. ELECTRIC MOTORIZED ERECTOR SET: An advanced construction set with metal plates, girders, angle pieces, wheels, shafts, nuts and bolts. A small, low rpm motor powered by batteries is included, batteries are not.

6. JUNIOR EXECUTIVE: A four player board game intended to teach cooperation in business decisions. Players negotiate decisions and make transactions according to prices of each move on the board. Accumulation of play money and assets marks the winner.

7. UNGAME: A board game with moveable markers and questioning cards. The game is best suited for four players, age 7 and up. The object of the game is to examine values and interpersonal communication in a nonthreatening game environment.

## PACT TOYS

1. JIGSAW PUZZLES: Fairly large sized pieces (at least 1 square inch each) and are made of laminated hardboard. The puzzles depict a male teacher and a male nurse, with labeled occupations.

# APPENDIX B

# EVALUATION INSTRUMENTS

Interviewer_____ Name_____
Group: A B C
Sex: M F

PRESCHOOL EVALUATION

I. PERSONAL ASPIRATIONS

What would you like to be when you grow up? (Probes: What kind of work would you like to do? What job would you like to have?)

1. _____

2. _____

3. _____

II. JOB PERCEPTIONS

(if female):
a. What kind of jobs can girls do when they grow up?
b. What kind of jobs can boys do when they grow up?

(if male):
a. What kind of jobs can boys do when they grow up?
b. What kind of jobs can girls do when they grow up?

(either):
a. What jobs can both boys and girls do when they grow up?

| | Girls | Boys | Both |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |

III. MODULE EFFECT

Can (child of same sex), or any other boy/girl be a (e.g., doctor) when he/she grows up?

Can (child of opposite sex) or any other girl/boy be a (e.g., doctor) when she/he grows up?

| | | Boys Do | | Girls Do | |
|---|---|---|---|---|---|
| 1. | Police Officer | Yes | No | Yes | No |
| 2. | Doctor | Yes | No | Yes | No |
| 3. | Nurse | Yes | No | Yes | No |
| 4. | Construction Worker | Yes | No | Yes | No |
| 5. | Teacher | Yes | No | Yes | No |
| 6. | Mechanic | Yes | No | Yes | No |
| 7. | Pilot | Yes | No | Yes | No |
| 8. | Flight Attendant | Yes | No | Yes | No |
| 9. | Veterinarian | Yes | No | Yes | No |
| 10. | Secretary | Yes | No | Yes | No |
| 11. | Truck Driver | Yes | No | Yes | No |
| 12. | Telephone Lineperson | Yes | No | Yes | No |
| 13. | Telephone Operator | Yes | No | Yes | No |

IV. PARENT'S OCCUPATION

a. What does your father do? Where does he work?

_____

b. What does your mother do? Where does she work?

_____

THNAK YOU for all your help in answering my questions.

SECOND GRADE EVALUATION

E T C
F M

Name_____

Interviewer_____

Part I

A. What would you like to be when you grow up? You may tell me several things if you like, but tell me in order of their importance to you. Start with what you most want to be.

B. What toy or game, in your classroom, did you enjoy the most this year?

C. What kind of work does your father do? Where does he work?

D. What kind of work does your mother do? Where does she work?

Part II

I'm going to name some jobs. If you don't understand what they are, I will tell you. I want you to tell me who can do these jobs (e.g., "Police Officer, can a man do that job? Can a woman do that job?")

| Occupation | Men | Women |
|---|---|---|
| Police Officer | | |
| Letter Carrier | | |
| Nurse | | |
| Musician | | |
| Dentist | | |
| Construction Worker | | |
| Teacher | | |
| Newspaper Reporter | | |
| Secretary | | |
| Doctor | | |
| Homemaker (housekeeper) | | |
| Baker | | |
| Pilot | | |
| Actor | | |
| Banker | | |
| Telephone Operator | | |
| Scientist | | |
| Bus Driver | | |
| Plumber | | |
| Carpenter | | |
| Dancer | | |
| Business Executive | | |
| Newscaster | | |

## Part III

## Picture Ranking

I'm going to show you eight pictures, two at a time. I want you to choose between the two pictures; choose the one that shows the job you would most like to do when you grow up.

| Rank | # of Occupation (see below) |
|---|---|
| 1 | _____ |
| 2 | _____ |
| 3 | _____ |
| 4 | _____ |
| 5 | _____ |
| 6 | _____ |
| 7 | _____ |
| 8 | _____ |

| | |
|---|---|
| Police Officer | 1 |
| Doctor | 2 |
| Pilot | 3 |
| Newscaster | 4 |
| Nurse | 5 |
| Homemaker | 6 |
| Secretary | 7 |
| Teacher | 8 |

FOURTH GRADE EVALUATION

NAME_____

Part I

A. What would you like to be when you grow up? You may list several things if you like, but list them in order of their importance to you. Start with what you most want to be.

B. What toy or game, in your classroom, did you enjoy the most this year?

C. What kind of work does your father do? Where does he work?

D. What kind of work does your mother do? Where does she work?

Part II

In your opinion, which of the following jobs should be held by men, women or both?

| Occupation | Men | Women | Both |
|---|---|---|---|
| Police Officer | | | |
| Engineer | | | |
| Nurse | | | |
| Musician | | | |
| Dentist | | | |
| Construction Worker | | | |
| Teacher | | | |
| Newspaper Reporter | | | |
| Secretary | | | |
| Doctor | | | |
| Homemaker (housekeeper) | | | |
| Baker | | | |
| Pilot | | | |
| Actor | | | |
| Banker | | | |
| Politician | | | |
| Scientist | | | |
| Flight Attendant | | | |
| Plumber | | | |
| Carpenter | | | |
| Dancer | | | |
| Medical Examiner | | | |
| Newscaster | | | |
| Business Executive | | | |

Part III

Picture Ranking

| Rank | # of Occupation (see below) |
|---|---|
| 1 | _____ |
| 2 | _____ |
| 3 | _____ |
| 4 | _____ |
| 5 | _____ |
| 6 | _____ |
| 7 | _____ |
| 8 | _____ |

| | |
|---|---|
| Construction Worker | 1 |
| Doctor | 2 |
| Pilot | 3 |
| Business Executive | 4 |
| Nurse | 5 |
| Homemaker | 6 |
| Secretary | 7 |
| Nutritionist | 8 |

# APPENDIX C

## MISCELLANEOUS PACT INFORMATION

# APPENDIX C

## ATTACHMENTS

1. Sample of letter sent at start of project to try to locate games for fourth graders in experimental classes.
2. Sample of letter sent at close of project to try to interest appropriate manufacturers and publishers in the products developed under the subcontract.
3. Sample of press release sent to toy trade publications: Toys, Toy and Hobby World, Playthings.
4. Copyright release letter secured from Office of Education
5. Partial copyright release letter secured from Utah State University.
6. Letters to and from the HEW patent office.
7. Listing of items produced under subcontract (both by type and number).

PACT
PUBLIC
ACTION
COALITION ON
TOYS

38 W. 9 ST
NEW YORK 10011

WESTERN REGION
P.O. Box 189
Providence, Utah 84332

WASHINGTON D.C.
800 4th St. SW Suite N125
Washington, DC 20024

ATTACHMENT 1

October 6, 1978

Dear Friend:

Public Action Coalition on Toys (PACT) has received a small grant, in co-operation with Utah State University, from the Office of Education to identify flexible career choices for girls and boys. It is interesting to note that in toy stores at this time, parents can find puzzles of female telephone linespersons but no male telephone operators, female mechanics but no male clerical personnel, female pilots but no male flight attendants.

We are seeking to find new innovative games, matching lottos, or other items appropriate for fourth grade children. These items must allow children of both sexes and a variety of racial and ethnic groups to have a sense of identification, either through the pictures on the box or the inherent features of the game. If handicapped children are included, all the better.

We suspect that interested individuals may have developed for their own use and purposes some appropriate play materials that we could now utilize in our research study. We are especially interested in games that are good enough to market but which have not yet been sold to any toy company.

If you are aware of amateur or professional toy designers in your area, please pass this information on to them. Or perhaps your organization has already created a special toy or game of which we should be made aware.

There are three specific career areas which we are interested in games about: energy, social services, and sports (especially tennis). We are also interested in generic career development and games that deal explicitly with sexism. If a product fits any portion of the description, we will consider it.

Toys and games chosen for this project must:

1. Be already completed due to time pressures.

2. Be completely safe.

3. Inspire constructive, non-violent activity.

4. Be packaged and have instructions written in a non-sexist way.

5. Allow for multi-racial identification (there are very few items available that give Hispanic, Native American or Oriental--American children any feeling of participation).

6. Focus on career development or the world of work.

We appreciate your assistance. Please have interested people contact:

Ms. Victoria Reiss
PACT
38 W. 9th Street (West Ninth)
New York, N.Y. 10011
(212) GR5-7348

Sincerely,

Pat Powers

Patricia Powers
616 Heron Drive
Silver Spring, Maryland 20901

PUBLIC ACTION COALITION ON TOYS
38 WEST NINTH STREET • NEW YORK, N.Y. 10011



PACT

BOARD OF DIRECTORS
Nancy Bekaben
Todd Boressoff
Mary Gloyne Byler
Marsha N. Cohen
Vincent J. Fontana
Felicia George
Arlene Hirshfelder
Myron Kaplan
Allenna Leonard
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Victoria Reiss
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Edward Swartz

ATTACHMENT 2

#

Dear #:

We are writing to inform you that three sets of toys have been developed (with federal funding from the U. S. Office of Education) for a research project, which is now completed, on expanding career options for children. These toys are available for a modest sum from Public Action Coalition on Toys. PACT is seeking a company that will manufacture and market these items to parents directly through retail outlets or to school systems. There are modules available for teachers if written materials are of interest to your company.

The products are not of technological interest although the display models are extremely well made and durable. The unique aspect of these products is that they are non-sexist without giving a "message". The products were field tested in schools in Logan, Utah, as part of an educational research project.

The focus of the project was not specifically on the play-worthiness of the toys that were designed. The new toys, being offered now, were part of several types of materials utilized to alter sex-role induced perceptions of the world of work. Commercially produced toys and games, flannel boards, and stand up figures complemented the toys PACT designed. PACT was asked by Utah State University, the prime OE grantee, to design new products because nothing was available on the market that

PACT letter continued

showed males in non-traditional jobs.

The toys were used with pre-schoolers, second graders and fourth graders in public schools and a laboratory school. The pre-schoolers especially liked the lottos or match-ups of 14 careers. The second-graders liked the puzzles and a sequence called "work is what we do" about different generations in a family. The fourth-graders liked their difficult jig-sawed puzzles. The children liked the art work and reacted positively to the pictures. The teachers were very excited about the project. For further information on the project, you may contact Paul Campbell at (801)752-4100, Sociology Department, who worked with the teachers. For statistical results, you may contact the project director, Dr. Pamela Riley, at the same number.

PACT is convinced that there would be a guaranteed small market for these products as nothng exactly like them, from an educational point of view, exists today. (There are items on the market now that show both genders in the same career and items that show females in role reversals.) The products have a nice balance of racial, ethnic, blue collar, and white collar representatives illustrated.

Our major concern is getting the items promptly included in the company's catalog and distributed. We know of one case where male nurturing puzzles were designed, put in the catalog, but never produced; obviously a contract would need to be drawn up to avoid a similar situation.

Please have your research and development division contact me if you are interested. My work telephone is (202) 872-0660 and my home telephone is (301) 439-3279.

Sincerely,

Patricia R. Powers
Project Consultant

PRP/tdh

ATTACHMENT 3

TOYS AND TEACHING MODULES AVAILABLE

The Office of Career Education, U.S. Office of Education, awarded a research grant this past year to Utah State University to look at options or choices for boys and girls. As part of that grant, Public Action Coalition on Toys (PACT), a New York City-based national consumer organization, was asked to develop new puzzles, lottos and match-up toys for children of preschool, kindergarten and second grade age. Those toys are now available for inspection, acquisition and distribution by educational materials and toy companies with an interest in non-sexist play items.

Dr. Pamela Riley of the Sociology Department at the University was project director. Ms. Victoria Reiss managed the sub-contract and hired two different toy designers to draw both realistic and fanciful pictures of men and women in nontraditional jobs for their gender. Earlier USU research had shown, for example, that female children, who are often encouraged to become physicians these days rather than nurses, exhibited little interest in being doctors but significant interest in being veterinarians. Therefore, one of the puzzles is of a woman vet.

PACT is known for its 1975, 1976 and 1977 awards to toys that were of highest quality and met the criteria for excellence established by the consumer watchdog group. To receive an award a manufacturer had to package a toy in a way to "invite involvement of children of both sexes and all races." Conversely, PACT has been critical of retailing practices and toys which convey to boys and girls "the most limited role definitions."

Arrangements can be made to have a release of copyright from the U.S. Office of Education and from PACT if a company is interested in acquiring

the new products for distribution to retail stores or to teachers and school systems. For further information, contact Patricia Powers at (202) 872-0660, or write to PACT, 38 West 9th Street, New York City, NY 10011.

ATTACHMENT 4

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

AUG 3 1979

Ms. Patricia Powers
Treasurer, Public Action
Coalition on Toys
38 West Ninth Street
New York, New York 10011

Dear Ms. Powers:

As Copyright Administrator for the Office of Education I am waiving the Federal government's copyright interest for the puzzles, lottos, and match-ups produced under Office of Education (OE) Grant GOO-78-00029. Accordingly you may enter into negotiations with toy companies without concern over the usual OE copyright requirements. However, the OE General Provisions for Programs reserves a "royalty-free, nonexclusive, and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use the work for Government purposes." I don't anticipate that situation occurring though. Remember also that Utah State University, the prime OE grantee, has not waived its interest in the materials per an April 25 letter to Ms. Victoria Reiss, President of PACT.

I appreciate and encourage your efforts to disseminate materials developed with Federal funds. If I can be of further assistance to you please don't hesitate to contact me in care of the Administrative Compliance Staff at 400 Maryland Avenue, S.W., Room 3851 Donohoe Building, Washington, D.C. 20202. My telephone number is (202) 472-2655.

Sincerely,

William A. Wooten

William A. Wooten
Copyright Administrator

ATTACHMENT 5

UTAH STATE UNIVERSITY · LOGAN, UTAH 84322

DIVISION OF RESEARCH
Telephone (801) 752-4100 Ext. 7671

OFFICE OF THE VICE PRESIDENT
FOR RESEARCH
UMC 14

April 25, 1979

Ms. Victoria Reiss, President
Public Action Coalition on Toys
38 West 9 Street
New York, New York 10011

Dear Ms. Reiss:

Subject: PACT Copyright Agreement under HEW Grant No. G007800029
Subcontract No. SC-79-016

Utah State University, the contractor, agrees to release in part to PACT the rights to any copyrights for toys generated through subcontract number SC-79-016 with USU. Utah State University grants this release based upon the understanding that 25 percent of any royalty income generated directly or indirectly as a result of the subcontract referenced above will be returned to USU.

The release is subject to the understanding that the Federal Government is entitled to whatever rights the U. S. Office of Education has. As far as USU is concerned, you may proceed with plans for copyrighting the materials based upon the above understanding, however, it would be understood that Utah State University makes no representation regarding the rights or interests of the Federal Government. PACT must deal directly with the Federal Government regarding any deviation, adjustment or determination regarding the interest of the Government in this project.

If as a result of the work or ideas developed under the subcontract, toys are developed and marketed from ideas promulgated or developed under the subcontract; or if the basic design, concept or function developed as a result of the subcontract is used, the University would expect the above to fall within the royalty referenced above.

Sincerely,

Bartell C. Jensen
Vice President for Research

BCJ/MKJ/mpe

cc: M. K. Jeppesen
William Loos
Pamela Riley

PUBLIC ACTION COALITION ON TOYS
38 WEST NINTH STREET • NEW YORK, N.Y. 10011

PACT

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Benjamin Spock
Edward Swertz

ATTACHMENT 6



Office of the General Counsel
Patent Branch, HEW
c/o National Institutes of Health
Room 5-A-03 Westwood Building
Bethesda, Maryland 20014

People:

Enclosed is the record of the products PACT arranged to have produced for the Utah State University Sociology Department study:

EXPANDING CAREER AWARENESS OF PRE-SCHOOL AND ELEMENTARY SCHOOL CHILDREN

Our sub-contract No.: SC-79-016

I have written to the artists to inform them that if the games and puzzles are ever made commercially, they will be given recognition for their part but that at present HEW owns them. The artists are:

Rudy Spinoza 747 Third Ave. NYC 10017
Manis Wessen 381 Park Ave. S. NYC 10016

As part of PACT's agreement with Utah State, we plan to show these games and puzzles to toy manufacturers who might be interested in producing them. PACT would like to have the "rights" if they are made commercially to use any funds earned to continue our educational, non-profit activities.

If you should want Polaroid pictures of these puzzles and games, we can arrange to send them.

Please let me know if you need more information.

Sincerely yours,

Victoria Reiss

Victoria Reiss
President

March 3, 1979

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OFFICE OF THE SECRETARY

WASHINGTON, D.C. 20201

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March 15, 1979

OFFICE OF THE
GENERAL COUNSEL

Ms. Victoria Reiss
President
Public Action Coalition on Toys
38 West Ninth Street
New York, New York 10011

Thank you for your letter of March 3 concerning the games and puzzles developed during the course of work in the Utah State University program.

We are in the process of reviewing your request, and shall be in communication with you as soon as possible.

Sincerely yours,

Leroy B. Randall
Acting Chief, Patent Branch

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20201

99

April 3, 1979

OFFICE OF THE
GENERAL COUNSEL

Ms. Victoria Reiss
President
Public Action Coalition on Toys
38 West Ninth Street
New York, N.Y. 10011

Dear Ms. Reiss:

This refers to your letter of March 3rd enclosing a record of the products PACT arranged to have produced for the Utah State University Sociology Department Study under subcontract No. SC-79-016.

I cannot tell from the enclosure to your letter entitled "Career Puzzles and Games Produced by PACT" exactly what the subject matter is. If I am correct in presuming that the puzzles and games developed under the subcontract are novel only because the art work is novel, they are probably not patentable. However, they can probably be copyrighted.

I understand that the Public Health Service funding received by Utah State was in the form of a grant. The disposition of copyrightable materials produced in performance of a grant is governed by the Public Health Service Grants Policy Statement. A copy of the section headed "Copyright" is enclosed. You will note that the policy statement authorizes the author to arrange for copyright on publications or similar materials produced in performance of the grant subject only to the reservation of a nonexclusive, irrevocable and royalty-free license to the Government to utilize the copyrighted materials for Governmental purposes.

In view of the foregoing, I suggest that you contact Utah State and attempt to resolve the question of whether to copyright the materials and how the copyrights will be administered in accordance with the Policy Statement. If you have any questions regarding this matter, please feel free to call me at (301) 496-7735.

Sincerely yours,

Thomas G. Ferris
Patent Attorney

Enclosure

cc: Ms. Patricia Powers

### *Copyright*

Except as otherwise provided in the conditions of the award, the author is free to arrange for copyright without approval when publications or similar materials are developed from work under a PHS grant-supported project. Any such copyrighted materials shall be subject to a royalty-free, nonexclusive, and irrevocable license to the Government to reproduce them, translate them, publish them, use and dispose of them, and to authorize others to do so for Government purposes. In addition, communications in primary scientific journals publishing initial reports of original research supported in whole or in part by PHS grant funds may be copyrighted by the journal with the understanding that individuals are authorized to make, or have made by any means available to them, without regard to the copyright of the journal, and, without royalty, a single copy of any such article for their own use.

### *Release of Information (Chapter PHS:2-501 and 45 CFR 5 and 5b)*

#### *The Freedom of Information Act*

The Freedom of Information Act, as amended, and associated public information regulations of HEW require the release of certain information regarding grants requested by any member of the public. The intended use of information pertaining to PHS grants or awards will not be a criterion for release.

Guidance is provided below with examples of specific grant documents that are covered by this policy.

1. For research or research training grants, application information is available only after the initial award has been made. Approved, disapproved, and pending continuation, competing extension, and supplemental applications incident to an approved initial application are available except as provided below.
2. For projects other than research or research training, application information is available before and after an award is made. This includes State Plan materials.
3. Notices of Grant Award or information contained thereon including project title, grantee institution, principal investigator or program director, and amount of award are available. A general description of the approved project is also available upon request.
4. Interim and terminal progress reports.
5. Reports of expenditures.
6. Final reports of any audit, survey, review, or evaluation of grantee performance that have been transmitted to the grantee.

Requests for access to records or documents containing the following types of information may be denied in whole or in part by designated departmental officials:

PACT
PUBLIC
ACTION
COALITION ON
TOYS

38 W. 9 ST
NEW YORK 10011



ATTACHMENT 7

CAREER PUZZLES AND GAMES PRODUCED BY PACT Sub-Contract # SC-77-
UTAH STATE UNIVERSITY

I. Five pre-school puzzles (art work by M. Wessen)

| | |
|---|---|
| Flight Attendant | Male |
| Librarian | Male |
| Telephone Operator | Male |
| Truck Driver | Female |
| Veterinarian | Female |

II. Fourteen match-up lotto sets (art work by M. Wessen)

| | |
|---|---|
| Secretary | Male |
| Ticket Seller | Male |
| School Cook | Male |
| Dental Assistant | Male |
| Cashier | Male |
| Dancer | Male |
| Bank Teller | Male |
| | |
| Farmer | Female |
| Veterinarian | Female |
| Recreation Director | Female |
| Pharmacist | Female |
| Repair Person | Female |
| Interviewer (with mike) | Female |
| Coast Guard (Petty Officer) | Female |